

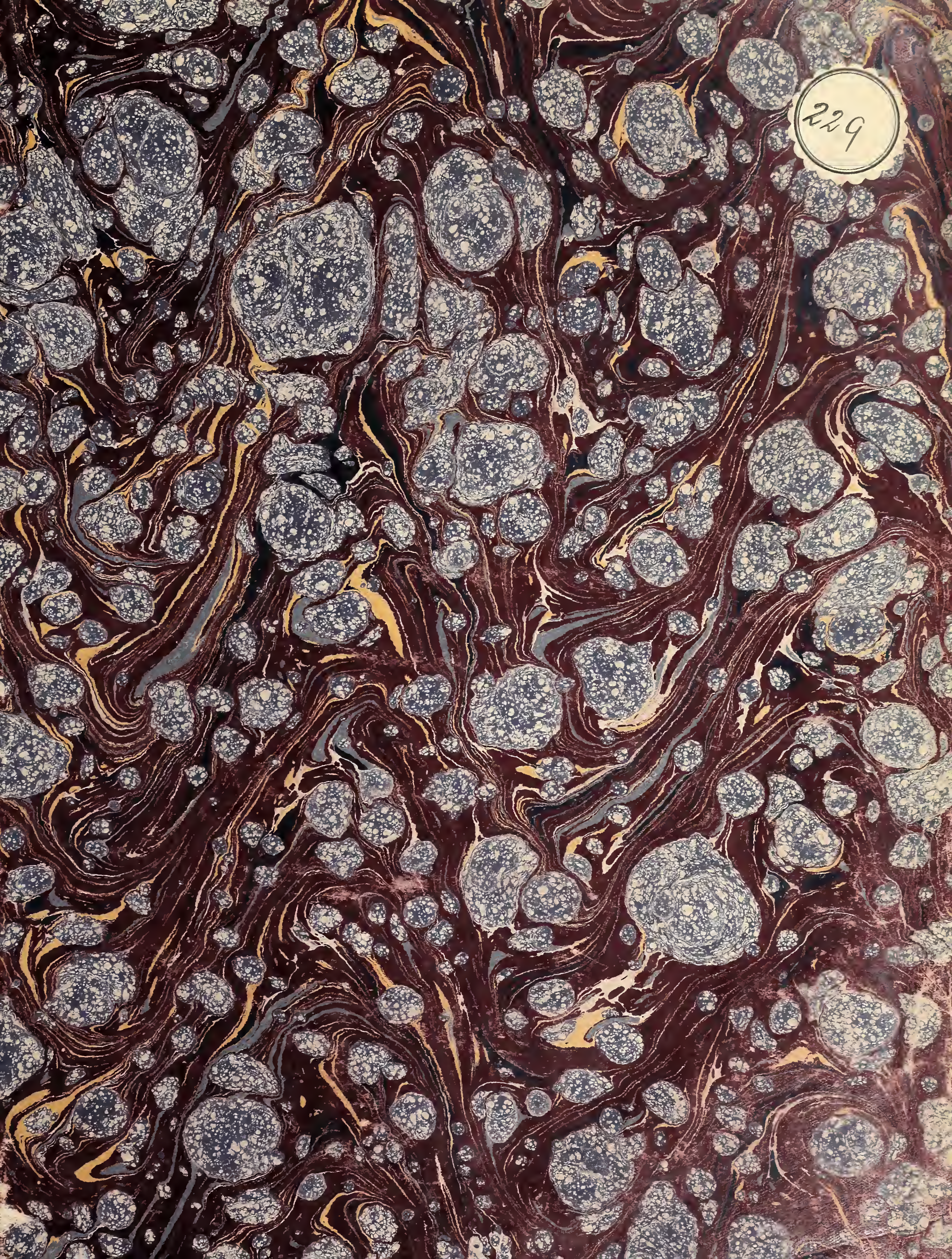








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# THE MACROLEPIDOPTERA OF THE WORLD

A SYSTEMATIC DESCRIPTION OF THE  
HITHERTO KNOWN MACROLEPIDOPTERA

IN COLLABORATION WITH WELL-KNOWN SPECIALISTS

EDITED BY

DR. ADALBERT SEITZ, PROFESSOR



DIVISION I: FAUNA PALEARCTICA VOL. 1—4

DIVISION II: FAUNA EXTRA-TROPICAL VOL. 5—16

VOL. 13

ALFRED KERNEN VERLAG STUTTGART



The  
**Macrolepidoptera**  
of the World

== A systematic account ==  
of all the known Macrolepidoptera

edited with the assistance of well-known specialists

by

**Prof. Dr. Adalbert Seitz**

Director of the Zoological Gardens at Frankfurt a/M., corresponding  
and ordinary member of numerous scientific societies.

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Translated into English

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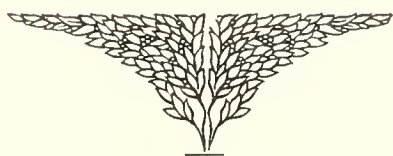
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== II. DIVISION: ==

The *Macrolepidoptera*.  
of the Exotic Fauna









# THE AFRICAN RHOPALOCERA

WITH 80 PLATES



TEXT



ALFRED KERNEN VERLAG STUTTGART

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# Preface.

With the present 13th volume, being the second volume of the Exotic Part, which I herewith place before the public, the Ethiopian Rhopalocera have been brought to a conclusion. For this division of the Macrolepidoptera of the World, the editor had succeeded in procuring the services of Mr. Christoph Aurivillius, of Stockholm, an authority on African lepidoptera, whose treatises and lists of Ethiopian lepidoptera have been universally acknowledged as a classical special work, in spite of their author's great comprehensiveness. The first really comprehensive classification of African Rhopalocera, which was edited in the Svenska Vetenskaps Akademiens Handlingar, and then found a world-wide propagation as an independent list, has here not only been circumstantiated and supplemented, but it has also been augmented by an elaboration of the Ethiopian *Grypocera*.

Thus the 13th volume has the advantage over the others of exhibiting greater uniformity and homogeneity in the disposition, although by distributing the different families among several authors the volume might have been brought earlier to a close. When the programme of the whole work had been drawn up, nobody could foresee that the temporal events would put a ten years' stop to the continuation of the work. It took but a few years to elaborate this volume, as apart from a few sheets at the beginning, it was chiefly composed in the years 1911—13, and then again in 1923 and 1924. The fact that the work on this volume was interrupted by the war and the first post-war years, was a natural effect of the intercourse of the country of origin with the foreign countries having been interrupted by the insecure state of Europe. If the long duration of these troubles could have been foreseen, the elaboration of this volume might have been contracted and abridged. But now, as these obstacles have been overcome, those using the work will be grateful for its being without a gap, and not so cursory as it would have certainly been if the author had endeavoured to bring it to an earlier close. The user of this volume will be particularly thankful for the insertion of tables of identification having been elaborated by the author for all the difficult lepidopteral groups, whereby the use and orientation have been greatly facilitated. They are of particular value, since the Ethiopian fauna which, unlike the other faunae, could only be explored in the last epochs, is confronted by considerable difficulties with respect to the identification. Owing to the excessive variability of African lepidopteral forms and to the faculty of their species to appear in frequently entirely dissimilar forms — as for instance the *Teracolus*, *Papilio dardanus*, *Hypolimnas dubia* etc. — which we do not find in the same intensity neither from the American nor palaearctic regions, this great help in identifying the species, in addition to a key for smaller lepidoptera, such as *Lycaenidae* etc., was particularly welcome. This classification, however, was also connected with great difficulties, since there exists, up to this day, but very little material of a great many species having been recently discovered.

The figures — almost 3000 — illustrating the text will presumably suffice for the speedy information about the essential characteristics both of the principal forms, the groups of species and the total fauna. Considering the very low price of the serial numbers sold at pre-war times, nobody will expect to see works of art which had never been promised nor intended, since such endeavours would have necessarily not only affected the price but also checked the progress of the work to a very great extent. Nor will the almost 1500 plates of the total work (800 of which have already been published) be claimed to be all of the same perfection. The publisher has spared neither expense nor pains in his endeavour of attaining a high finish, and also the editor believes to have done his best for their furtherance; but the most disadvantageous restriction of the import of raw materials during and after the war, being almost catastrophic to the dye-works, impaired the application of first-rate colours in the production of life-like coloured plates in Germany. Still greater difficulties arose from the recruiting of all skilled labour for the defence of the country, as well as from the troubles during and after the Revolution, the detrimental effects of which have as yet not been entirely got over. Nevertheless the unprejudiced critic will find out that, after an unmistakable decrease of artistic performances in the years 1920 and 21, during which time some plates of *Lycaenidae* were produced, a revival is distinctly noticeable



in accordance with the increasing recovery of Germany.

Considerable difficulties for the illustration also arose from the frequent interruptions in the postal service in post-war times. By appointing the most unqualified men to the higher and lower offices during the Revolution, the despatch of valuable and at the same time delicate objects has been for several years made quite impossible. Thus particularly the Lycaenid plates exhibit much fewer life-like figures than the preceding plates, and some faults in the illustration are therefore rather due to the lack of original specimens than to their having been incorrectly reproduced by the fine art printers. The author has therefore unhesitatingly pointed out in the text the faults in such cases where they were particularly glaring.

In most of those cases where the illustrations were recognised to be insufficient for identifying a form, because some species vary too much as to be made distinct enough by a figure which always only reproduces a certain individual, or because there were doubts as to the reliability of the original specimen or of the reproduction, it has been tried to compensate for it by dealing more at large with the respective insect. The author, by means of his comprehensive survey, and by his being thoroughly acquainted with the subject dealt with, appeared to be more capable than any other compiler to point out and particularise the distinctive marks, so that the present volume may be especially suitable as a basis for monographies on groups of exotic *Rhopalocera*. About 3700 Ethiopian forms have been treated, and now for the first time both collectors and museums will be able to identify their collections without having to gather together the multifarious literature taking up so much time. We beg to emphasize this particularly in the African volume, since the material sent to us, in spite of its scantiness, proved that there is in no other fauna such great uncertainty of determination as we were able to perceive even in large and otherwise thoroughly examined collections with respect to the African returns.

It is probably hardly necessary to repeat also in this volume what has often been hinted at in other volumes, that this thirteenth volume is neither intended to supply a combination of exhaustive monographies, although some groups that had hitherto been rather little cleared up (e. g. *Diestrogyna*) have been dealt with more at large than was done in other groups which are more easily understood. Owing to the fact that the whole work is the first of its kind, the editor expects the scientific world to criticize it mildly. With a manual it is quite impossible to aspire to the correct solution of all doubtful and uncertain points of the extensive matter. There is no room whatever for any critical discussions, since all the species known of the macrolepidoptera had to be dealt with, and the author has often followed the editor's desire of keeping up old, erroneous, or unproved matters in the arrangement and systematical order, so as to avoid extensive discussions which are not in the intention of the total work. What had hitherto been wanting, and is to be called into existence here, is not a critical manual, but a work of reference, which may easily be taken along to foreign countries and instruct the collector there in what way he may quickly recognize and value his exploits. Such a work has hitherto been missing; long, circumstantial extracts and notices from special works, copies of faunistic lists, and sketch-books had been necessary, unless the collector, on his return, much to his disappointment, would find out that he had paid attention to unworthy and well-known insects and had overlooked the noteworthy ones.

At this final aim the editor has always been striving, and if the author, by his conscientiousness and eminent practical knowledge, has nevertheless corrected many a mistake of the hitherto existing literature on the Ethiopian *Rhopalocera* and has also taken into consideration the latest researches, whilst a supplementary essay is planned for the families having been published previous to it, we beg to accept this special work as a compensation for the various shortcomings in the illustrations, particularly also in the designation of the plates exhibiting in many cases the disturbances caused during the war — and post — war troubles of the last decade.

The other point of view having led to the start of the „Macrolepidoptera“ — to enable its owner to judge quickly about any offers or acquisitions — has not for one moment been left unregarded in this volume. The difficulties of getting a clear notion of many Ethiopian lepidoptera by means of the frequently extensive diagnoses or insufficient representations of the old technique, impeded the sufficient utilization of faunistic classifications. Though there are excellent monographies on numerous groups of African *Rhopalocera* to hand, yet they do not exist with other genera, and a perfect idea of any newly appearing faunistic list could only be obtained after having procured works and journals that were partly difficult to get hold of. Of what great use the „Macrolepidoptera“ may be in this respect, might be proved by the attempt of procuring a general view of the African *Heterocera*, the proper elaboration of which is only beginning just now; such a survey can be gained to-day only by toilsome and time-consuming studies.



We need merely yet to exculpate ourselves for the fauna dealt with here having more frequently been called „African“ than „Ethiopian“. This denomination does not agree with the matter dealt with inasmuch as in the first instances the great district north of the Sahara, in spite of its being African, is eliminated, and in the second instance since the more southern part of Arabia, particularly the Yemen and Hadramaut still exhibit the typical Ethiopian character. But as the endeavours of the Abyssinians of restoring the former name of „Ethiopian District“ to the country of Habesh, have just lately been resumed, the ambiguity of the name of „Ethiopia“ could easily lead to misunderstandings.

Thus we submit this volume containing 80 plates of African *Rhopalocera* — compared with 172 Indian and 203 American — to the public, trusting that the honest endeavours of getting over both the anticipated and the unforeseen difficulties will also be acknowledged in those cases where this was but little possible, and that the editor will be thanked for his placing the elaboration of the material into the most trustworthy hands.

D a r m s t a d t , April 1925.

Dr. Adalbert Seitz.







===== VOLUME XIII: =====

# THE MACROLEPIDOPTERA

of the

## ETHIOPIAN REGION





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# Introduction.

The vast continent of Africa, which extends in an unbroken mass over three zones, would scarcely lead one to suppose that it contains two utterly different faunas. As has been already explained in the Introduction, the Sahara, which is almost devoid of animal life, forms the division, and its almost complete lack of vegetation only permits a few species to cross over, which are practically independent of climate and specially powerful fliers.

When defining the limit of the Palaearctic Region towards the south it has already been mentioned that the countries of the Atlas Mts. have no connection faunistically with the rest of Africa. Neither have they as regards climate. As far as the middle of the great desert a cold season prevails in North Africa at the same time as the European winter, though of very varying duration. In the Aurès Mountains of Algeria this winter season lasts 6—8 months in the higher altitudes. Continuous, or often repeated, snowing up of the mountain passes is not uncommon in the higher parts of the Atlas Mountains, and long after every trace of snow has disappeared in Mid-Europe the peaks of the Moroccan Atlas and the cedar-covered Aurès Mountains are crowned with dazzling white.

But south of the Sahara there is no winter. Although in South Africa the temperature sometimes falls considerably at night and it is difficult to protect oneself from the severe cold, that does not prevent the sun from scorching down powerfully 12 hours later, and there is no hibernation of the vegetable world; it is changed into aestivation, for the vegetation dries up in the hot season and only puts forth flowers and young shoots after the regenerating autumn rains.

In true tropical Africa there is no break at all in plant-life and an always green and always leaf-covered vegetation grows here so thickly that in places the impenetrability of the Indian or Brazilian primitive forests is attained. But the region which is covered with these forests is not very large and is mostly broken up by grass-land. On the whole the steppe character predominates in Africa.

The small number of high mountain ranges does not appear to favour the development of a very variable lepidopterous fauna. Only very few African districts will bear any comparison with the constantly varying character of Asiatic mountains, as the Himalayas, the Sunda Mountains or the Japanese mountain ranges, or again with the immense Andes range of America. Only Abyssinia, Mount Kilima-Njaro and Madagascar show higher elevations and more deeply cut valleys, to which may be added the much more southerly Drakensberg. The mountains of the Cameroons, of Togo and Benguela, and the Nile mountains are not high enough to contrast faunistically with the surrounding lowlands, and the hills along the coast, the transverse chains which intersect the steppes and wastes of the vast interior, are scarcely more than dunes in character.

The physical character of Africa is briefly as follows: The interior is a tableland, which quickly, often in terraces, slopes down to the sandy coast. Short but violent rainy seasons deposit upon this high land large masses of water, which run down to the sea in small but deep rivers. These dash over the terraces which lead down from the tableland to the coast, in wild cataracts, until the lowland at the coast is reached, where the masses of water fill the often enormous river-beds, overflow them and finally reach the sea in a many-branched delta. The floods occur, as a natural consequence of the highland rainy seasons,



regularly and certainly, so that nature, particularly the animal world, is adapted to them, and further that man himself, if he understands as the old Egyptians did, has learnt to coöperate with the waters, to apply them to profitable irrigation, and to establish a rational system of drainage.

The genuine forest region in Africa only spreads over that part of the torrid zone which extends from 10° N. to about 20° S. But even here the actual primitive forest only reaches the coast here and there, neither does it extend in an unbroken mass to the high-lying interior, but steppes covered with gigantic grasses intersect it with ever increasing frequency, and merge more and more together to form the vast grass-covered plains which spread over almost the whole of Central Africa. The forest becomes always scantier and more broken up into strips towards the tableland, until at last only isolated mangrove trees, comparable to scattered erratic rocks, break the uniformity of the steppe.

Thorns are a striking characteristic of African vegetation. It is true that in America and India we meet with spinous growths enough, but still only isolated, scattered about in thickets of harmless vegetation. But in Africa there is scarcely a plant or a shrub which does not sting, scratch, hook or catch in a manner most annoying to the traveller. Even the high-growing mimosas and acacias produce thorns, which, moreover, they cast off, and which then lie about under the trees always joined together in threes, and, since in consequence of the prickles projecting in three directions one thorn must always point upwards, act as traps for the feet.

This inaccessibility of the plants which spread over Africa at the present day is a proof of a characteristic peculiarity of the vegetation, which again solves many a zoogeographical enigma. The present flora of Africa, indeed, is but a scanty remnant, the remains of a once enormous number of species of plants from which almost all the edible leaf-bearing ones have been exterminated — exterminated by the quite phenomenal richness of Africa in leaf-eating animals; a richness in herds of ruminants, pachydermata and perissodactyls, such as no other part of the world has ever known. Having seen at times how, before one herd had disappeared on the horizon, the next had already appeared to eat what was left, and how every prickly plant which the tender-mouthed gazelles had spared was immediately devoured by some larger, more hardy, wild animal, it has become clear to me why, as far as the eye could reach, only tough prickly grasses, thorny briars, thistle flowers and inedibly bitter wormwood or acrid salt-plants were to be seen. It was also clear to me how this terrible warfare which the vegetation had to wage against its destroyers must influence the insect fauna, particularly the Lepidoptera. An almost complete absence of the monophagous leaf-feeders which have not selected thorny or poisonous plants as their food was a necessary consequence of it; also the wide distribution of those inhabitants of the steppes which can endure long seasons of drought; a preponderance of those forms which fly in one very short generation or which in a second generation are adapted to quite different conditions of vegetation and weather, etc. I might even say that there is hardly any fauna in the world whose peculiarities are derived so naturally from the character of their native land as the African; and these peculiarities we will endeavour to bring out in the following lines.

A **universal distribution** of many species within the Ethiopian Region, which extends over almost the entire continent, is the most prominent peculiarity. In no other fauna does it happen to the same extent that a butterfly (say for instance for Africa *Danaus chrysippus*, *Pyrameis cardui*, *Lycaena baetica*, *Deiopeia pulchella*, *Catopsilia florella*, *Celerio celerio*, and many others) is found approximately as commonly at the north as at the south boundary, in the extreme west as in the east of the region.

Strongly developed **polymorphism** is a further characteristic. Hence it is that many species vary according to sex as well as season, and further according to locality. Many species have for both ♂ and ♀ a characteristic form for the rainy as well as for the dry season, so that for every locality of the Ethiopian fauna many species occur in 4 clearly distinguished forms. Sometimes these forms alter completely even in adjacent districts, and this explains why sometimes over 30 species have been erected for what we now regard as forms of a single one.

**Mimicry** also is here at work, and in a form thoroughly characteristic of Africa. We have the so-called »Uniforms« here also, as we made acquaintance with them in America for instance. Models are principally the *Amazilia*-species and the Acraeids. But together with this the sovereign disregard of proportion in size is truly African. Far more than is the case in any other region, we find undoubted imitations and similarities in colour and pattern where the size is so entirely different that we might regard any effective deception as a priori out of the question; but he who knows the African fauna accurately considers this deception as not out of the question, but as intended by nature, and as very feasible, for the following reasons.

In a survey of extensive African material we meet with a great **richness in dwarfed and crippled forms**. Large, deep-coloured and strongly-built wet-season forms may have tiny, pale-coloured and almost patternless butterflies as dry forms. Thus I observed in my daily excursions how the individuals of a species



of *Teracolus* were smaller from day to day, so that within scarcely 6 weeks the size of the insects had diminished to less than half of the original dimensions; and I possess African Pierids which measure scarcely more than a third the size of specimens of the same species from the very same district.

It is a natural consequence of adaptation in nature that in a part of the world like Africa, where the **red-yellow** of the dusty and rocky background plays the principal part among the colours of the landscape, in many districts constantly, in almost all during the summer drought, the Lepidoptera also wear these colours in all imaginable mixtures and shades. A good two-thirds of the African butterflies are of red-brown, yellow-brown or dark brown colour. *Acraea*, *Danaïs*, *Mycalesis*, *Henotesia*, *Ypthima*, *Lachnoptera*, *Atella*, many *Precis*, *Cymothoë*, even many Lycaenids (*Mimacraea*, etc.) have brown or sandy yellow ground-colour. It is worthy of note that these are just the species that are particularly common, sometimes even abundant, whilst the other, often brilliantly coloured genera (*Charaxes*, *Papilio*, *Neptis*, *Hypolimnas*, *Euphaedra*, etc.), although in many cases not rare, are yet of less general occurrence, so that they cannot so correctly be described as characteristic butterflies of Africa as those previously mentioned.

A **short time of appearance and flight** of certain species of Lepidoptera is characteristic of many districts of Africa, especially in the southern part, and is due to the peculiarities of the climate. In the extreme south of the Palaearctic Region there are a large number of Lepidoptera which we meet with almost continuously all the year through; e. g. *Chrysophanus phlaeas*, *Lycuena baetica*, the species of *Pararge*, and others. A series of generations follow one another and are so intermingled that on the Mediterranean coast for instance there is scarcely a day in the year on which in the sunshine a *Pararge megera* for example might not cross our path. But we have the exact opposite in certain districts of Africa, such as the Cape. During a relatively small part of the year a species goes through its entire life-cycle, to the then following egg-, or more commonly pupa-state. This pupa then remains dormant for the rest of the year — often three-quarters — and without apparent progress in its development, until the short season of flight approaches. At the end of this the insects die off very quickly, so that in spite of the speed with which the ants make off with the bodies the dead insects may often be seen lying about as if sowed, and this without any sudden change in the weather to be a general cause of death.

If we think of the enormous difference which separates the dry steppes of Africa from its luxuriant forest region, it is easy to understand why the distribution of the Ethiopian fauna is so unequal. We see this especially clearly when we consider the number of species by which the different families of Lepidoptera are represented in the Ethiopian Region.

The **Papilionids** are represented by about 100 forms, but so unequally that there are large districts in Africa in which none at all occur. The only district of the Palaearctic region (except the smaller islands) where the genus *Papilio* is entirely absent is likewise African, namely Egypt. But although the parts of Africa which are absolutely devoid of Papilios are not very large, immense tracts of the Ethiopian Region possess only one species, namely *Papilio demodocus*, the sole representative of the genus which is of universal distribution in Africa. In contrast with these districts which are so poor in Papilios we find places on the tropical west coast where over a dozen *Papilio*-forms may be observed in one day, and which may therefore be compared for their richness in Swallowtails with the most prolific districts of South-East Asia or South America. But one peculiarity may always be noticed: that on the African continent the most protected Swallowtails, the Aristolochia-Papilios, are entirely wanting. There are on this account also no *Papilio* which appear to be modelled on other *Papilio*-species: a phenomenon which is of such frequent occurrence in Asia and America that whole series of mimics occur in the genera *Pharmacophagus* and *Papilio*. — On the island of Madagascar alone (which, especially in its higher animals, shows such a surprising approach to that of India that prehistoric hypotheses of all sorts have been based on it) occurs a butterfly — *Papilio antenor* — which has been referred to *Pharmacephagus*. Mention must also be made of *Pap. antimachus*, whose enormous ♂ seems to present the somewhat contorted form of a gigantic *Acraea*. The much smaller ♀ however (for which sex mimicry has special importance) actually resembles a large Acraeid of the genus *Planema*, and it is therefore not necessary, in seeking after a model for *P. antimachus*, to assume an extinct giant Acraeid. In a very large *Papilio* of the west coast, *Pap. zalmoxis*, an equivalent is offered for the Aristolochia-Papilios of the group *Ornithoptera*, which are entirely wanting. The wholly unwarranted classification of *zalmoxis* with the *Ornithoptera*-group was made on purely superficial grounds.

The **Pierids** in Africa share with the Acraeids their dominance throughout the region. Characteristic of all the woodless districts of Africa is *Teracolus*, which flies very swiftly over the sand-hills and rocks of the desert and even occurs in large numbers where the want of water in a neighbourhood seems to preclude all vegetation. Nevertheless a caper bush or a crucifer squeezed in between two stones offers enough nourishment for the slender Pierids of this genus. — Very remarkable in appearance is also *Pseudopontia*, a fragile little insect with broad wings, completely rounded off. In its outer build as well as in the



neuration of the wings (so frequently overestimated in its systematic value) it deviates so much from the other Pierids that there has been much doubt as to the family to which *Pseudopontia* belongs, in fact it has even been doubted whether it was a genuine butterfly at all. — The more vegetation an African district shows, the larger and more stately become the Pierids which inhabit it, and the forms of *Pieris*, *Appias* and *Eronia* in tropical Africa are among the most imposing representatives of the family.

The **Danaids** play a larger part in Africa on account of their richness in individuals, in spite of the relatively small number of forms. They are entirely absent only in the north-western part of the continent, in Palaearctic Morocco and Algeria; otherwise they are to be found almost everywhere, even in deserts almost devoid of plants, sometimes in strikingly beautiful forms. *Euploea*, indigenous in the whole Indian Region as characteristic butterflies, are entirely wanting in continental Africa, and are to some extent replaced by the genus *Amauris*, which is much less rich in forms.

The **Satyrids** are to some extent in the background in the mostly tropical Ethiopian Region. Out of the ca. 150 species the small or mediumly small genera *Mycalesis* and *Ypthima* are the most largely represented. The genus *Meneris* includes some magnificent forms in the extreme south, but these are a poor equivalent for the genus *Satyrus*, with its numerous species, in the north of the Old World, and *Heteronympha* in the south of Australia. The family is connected with the neighbouring faunas by the isolated form *Pararge maderakal*, from Abyssinia, the only non-Palaearctic *Pararge*, and has in common with India *Melanitis leda*, which is distributed through all the warmer part of the Old World. The African forms of the genus *Elymnias*, whose Indian relatives mimic forms of *Euploea* or *Danaüs*, have for their model the genus *Amauris*, indigenous to Africa.

All the families of the Satyromorphids which are not included in the Satyrids are completely wanting in Africa. Neither the Morphids, the Amathusiids nor the Brassolids have any representative in Africa, nor even any ally which can be regarded as an equivalent for these gigantic butterflies.

The **Nymphalids**, whose relatively even distribution over the world we have already mentioned in another place (Vol. IX, p. 4), constitute just a third of all the known African butterfly-forms if we include with them *Acraea*, so closely allied to the Melitaeids. In *Charaxes*, of which 100 purely African forms are known, in *Cymothoe*, with over 50, in *Euryphene*, *Diestogyma* and *Euphaedra* (the old *Romalaesosoma*), with 100 species collectively, we have a rich contingent of imposing butterflies, which is constantly being increased with the growth of our knowledge of Central Africa. It is worthy of note that the ca. 300 large forms of African Nymphalids are almost all crowded into the equatorial region, but the south of the continent is quite poor in the larger Nymphalids, and the (Palaearctic) north of Africa only possesses 7 larger and 6 smaller species.

The **Acraeids** number in Africa over 150 forms, sometimes merged into one another, and there is no hill, steppe or river-bank in the Ethiopian Region where one does not observe these thinly-scaled butterflies, apparently so weak and helpless, yet so tenacious of life. In the Palaearctic fauna we have only one species, which scarcely reaches the region, and in the Indian Region likewise only a few scattered representatives. But in America a parallel branch has developed in the genus *Actinote*, which nevertheless, large as is its number of forms, does not extend beyond the tropics, either north or south, to any degree worthy of mention.

Africa produces no examples of the third group of the »Acraeomorphid Nymphalids«, the Maracujà-butterflies of FRITZ MÜLLER, which are represented in the Indian tropics by *Cethosia* and in the American by *Heliconius* and the Nymphalids of the *Colaenis* group.

The **Libytheids** and the **Erycinids** are also very poorly represented in Africa. This is the less surprising in the former since, although *Libythea* is distributed over all the warmer parts of the earth and is mostly also common, yet there is scarcely a country in which we meet with more than one form of this remarkable genus. As regards the Erycinids, whose head-quarters are in tropical America, they appear in Africa in the same insignificance and paucity of species as in the Palaearctic and Indo-Australian Regions, namely in only 10 forms.

The **Lycaenids**, through their richness in forms, constitute about a third of the whole butterfly fauna of the Ethiopian Region. In the sand-coloured, sometimes mimetically altered genera *Mimacraea*, *Pseuderesia*, *Liptena*, *Pentila*, etc., we find thoroughly unfamiliar modifications of the Lycaenid type, whilst in *Aphnaeus*, *Heodes* and others we notice analogies to well-known groups from other faunas (*Cigaritis*, *Chrysophanus*). *Lycaenesthes*, *Lampides*, *Zizera*, *Iolans* and *Deudorix* preserve in Ethiopian Africa their universal distribution.

The **Grypcera**, composed of the single family of the Hesperids, occur in Africa in about 350 species; this corresponds approximately to their distribution in the warmer part of Asia. But this number falls considerably below the multitude of their American allies, although in itself it appears not inconsiderable.



Very prominent are the species of the genus *Rhopalocampta* (indigenous to Africa), which fly by day, although allied to the nocturnal *Ismenc*. *Rhopalocampta forsteri*, with buzzing, moth-like flight, which is widely distributed in Africa and often hovers in myriads round the flowering trees, is quite one of the characteristic species of many districts. Ethiopian Africa has not a single form in common with America and only very few with Europe, whilst the Atlas countries possess almost exclusively forms allied to European species. *Celaenorrhinus*, *Cyclopides*, *Baoris*, *Caenicles* and *Pardalodes*, together with the above mentioned *Rhopalocampta*, are the most widely distributed genera of Africa.

Passing to the Heterocera we find the family of the **Zygaenids** in a series of forms which are closely allied to our genus *Zygaena* and represent this essentially Palaearctic genus in the Ethiopian Region. In place of the crimson of our European *Zygaena* bright yellow is the prevailing colour of their South African allies; otherwise *Zutulba*, *Neurosymphloca* and *Arichalca* only differ slightly in shape and size from the European forms. It is very striking that the true *Chalcosiinae*, the group of the *Zygaenidae* most rich in species, is scarcely represented at all in Africa, although the genus *Chalcusia* itself reaches with Aden in Arabia an offshoot of the Ethiopian Region. The few African Chalcosiid genera deviate somewhat considerably from the typical character of this subfamily, so that it might well be considered whether they should not be removed from it altogether. — The subfamily of the *Himantopterinae* is represented in Africa by a small number of forms, which were formerly regarded as a separate family under the name of *Thymaridae*. They are associated with Termites, and their singularly metamorphosed hindwings have doubtless a distinct biological significance.

The **Syntomidae** occur in tropical Africa, as in all other tropical lands, in a variety of shapes and forms. *Pseudonactia* and *Stictonactia* represent the Palaearctic *Dysauxes*, and very many genera, such as *Tascia*, *Eutomis*, *Myopsyche*, *Epitaxis*, *Thyretes*, *Apisa*, *Metarctia* (particularly rich in species) and others, are wholly confined to the Ethiopian Region.

The **Lithosiidae**, scattered over the whole world, have also many forms in Africa. Being inconspicuous little night-fliers, hardly noticed by the ordinary collector, many of them were not known until lately, and it is probable that the thorough exploration of Africa which has recently been commenced will bring to light many new forms.

Of the **Arctiidae** it has already been said in the introductions to Vol. V and Vol. IX that their principal habitat, at least as concerns the typical, gay-coloured genera, is in the temperate zone. In Africa it is especially the more unicolorous *Diacrisia* and *Estigmene* which represent the family. But this only refers to the part of Africa which constitutes the Ethiopian Region; the Palaearctic north is proved to belong to Europe by the occurrence of gay-coloured »woolly bears«, such as *Arctia villica*, *fasciata* and *dido*, of truly northern character.

As **Hypsiidae** a number of genera are being classified, some of which are peculiar to Africa, as *Egybolis*, *Caryatis*, etc., whilst others are scattered over the tropics of the Old World, as *Eligma*. As long as this group, which probably forms only a subdivision of some other family and from which many genera will have to be removed, has not been accurately defined and systematically worked out in detail, a consideration of the forms included in it in a given fauna has no great value.

Almost the same applies to the **Nyctemeridae** as to the previous group. Quite a number of the genera formerly included in it, some of them exclusively Ethiopian, have been proved to be erroneously placed there. The genus *Nyctemera* itself is represented by a series of species, among which are some mimetic forms (*Nyctemera acracina*), which copy the favourite African model, *Acraea*.

The **Liparidae** with their universal distribution have also genera peculiar to the Ethiopian Region. Most of the African species belong to widely distributed genera, such as *Orgyia*, *Lymantria*, *Dasychira*, *Aroa*, etc.

The faunistic relations of the **Psychidae** to the several countries and continents have already been characterised in the V. Volume (p. 7). From the southern half of Africa, resp. from Madagascar, very few species, among which, however, are some of the larger forms, have as yet been made known; but it is to be expected that when more orderly conditions in the interior of Africa permit of larva-breeding, the number of known African Psychids will be very considerably increased.

The small number of **Limacodidae** in tropical and southern Africa is very noticeable. Besides some few representatives of generally distributed genera, such as *Parasa* (*Ncaera*), *Miresa* and *Natada*, there are scarcely any specially African forms in this family. Although the fact that more forms are recorded from Madagascar, the Heterocera of which are better known, than from the continent, leads us to hope for numerous discoveries in the future, yet it is unmistakable that the west of the Old World is avoided by this otherwise almost cosmopolitan group, as we have already intimated in connection with the distribution of the *Limacodidae* in Europe.

The collective group of the **Notodontidae** is on the whole very weakly represented. It is the more remarkable that the genera indigenous to Africa, such as *Anaphe* and *Antheua*, are such as are further



removed from the typical Notodontid-forms, whilst the characteristic genera, otherwise widely distributed, are wanting, for instance the true puss-moths, which are distributed over all the other parts of the world. This absence of *Cerura* south of the Sahara is so much the more striking that to the north of it these moths occur in a number which is only approached in single districts of East Asia and never reached in Europe. I saw in North Africa clusters of old poplars which showed not the slightest remains of a leaf; so completely had they been defoliated by the *Dicranura* larvae. Whether the Cape *Dicranuropsis vilis* Fldr. is very nearly allied to *Dicranura* or *Cerura* I have not been able to decide. — That the genus *Phalera*, which is widely distributed in the Old World, is not represented in Africa, is a parallel phenomenon to the circumstance mentioned above.

The **Sphingidae**, on account of their powerful and protracted flight, do not show so many species confined to smaller districts as do more sluggish families of Lepidoptera. The Ethiopian Region has not quite a quarter of all the known Sphingids, among them very many species peculiar to itself. Here again is seen the remarkable circumstance that the Sahara forms a restrictive barrier even for these powerful fliers, which cross the Mediterranean Sea with ease, for it has only quite occasionally been reported that one of the numerous Sphingid species of tropical Africa has appeared as an immigrant north of the Sahara.

The **Saturniidae** show the same peculiarity. In Palaearctic North Africa there is only one Saturnid, of South European type, *Saturnia atlantica*; but south of the Sahara occur a long series of peculiar species and even genera. True giant forms, such as *Philosamia ploetzi*, *Bunaea phaedusa*, *Nudaurelia bareas*, etc., impress one by their size, and the enormously long-tailed *Eudaemonia* by their shape; *Holoceera* and *Ludia* when at rest are deceptively like an inconspicuous withered-up leaf; but of all these remarkable forms, good fliers as many of them may be, not even one has found the way across the great desert to the north. Thus Ethiopian Africa has apparently preserved its special character in regard also to this universal family and adapted its fauna to the peculiarities of the land. The latter possesses an enormous number of all destructive insects, such as ants and Termites, and we may notice it as a specially arranged means of protection against these destroyers that many of the Ethiopian Saturnid pupae which lie free on the ground have a shell of extraordinary hardness and power of resistance; thus the pupae of *Gynanisa*, *Nudaurelia* *Antheraca wahlbergi*, etc., are virtually mail-clad.

The **Lasiocampids** are well represented, especially in the south of the region and in Madagascar. Many of the moths of this family come from unusually large larvae, several of which are protected by hairs which produce inflammation.

The Ethiopian Region is not rich in **Cossidae** and **Hepialidae**. Some imposing forms of the *Xyleutes* group and a very few species of the genera *Ptychiloma*, *Dalaca* and *Phassus* form no satisfactory equivalent for the gigantic Australian Cossids and the Hepialids *Phassus giganteus* of America and *Pielus hydrographus* of Australia. On the other hand the most beautiful of all the *Hepialidae* inhabits South Africa, as well as the most beautiful Cossid; the former, *Leto venus*, has thick rows of large silver spots in the reddish yellow ground of the forewing, and the Cossid (or Zeuzerid, as is usually written), *Chalcidica auroguttata*, is sprinkled over with gold-yellow dots on a blue ground.

The smaller groups of Bombycids, not mentioned here, have so little bearing on the characterisation of the Ethiopian fauna that they need not be discussed here; one group, however, is worthy of mention, although it has only two representatives, nearly allied to one another, in the African fauna. This is the family of the **Uraniidae**, whose African species, *U. croesus* and *riphesus*, with green and gold iridescent bands, are perhaps the most beautiful of all known Lepidoptera.

The **Agaristidae** form a transitional family to the Noctuids. Their noble colouring, their light, elegant flight and their pleasing form, free from all grotesque contortions, show them as one of the most favoured groups, and the allied genera *Anaphela* and *Xanthospiloptyx* confined to Ethiopian Africa strike even the non-entomologist. But in most districts of Africa the Agaristids are not common, and as they are also for the most part very retiring, they are not easily to be seen.

The **Noctuids** are quite as variable in Africa as in the other faunas. Specially long periods of glaring sunshine and absolute lack of rain cause the small, brightly coloured day-Noctuids, allied to *Heliothis* and *Acontia*, to preponderate rather than *Agrotis* and *Mamestra*, more numerous in the temperate zone. *Catocala*, which occurs north of the Sahara in 8 species and in the summer in myriads of individuals, is entirely absent in the Ethiopian Region; *Ophideres* and *Ophiura* and the beautiful *Miniodes* occur in its place. Large dusk-flying Noctuids are not rare in places, but there is no form which approaches the gigantic American *Thysania agrippina*; at the most small specimens of *Erebus odora* are equalled in size by *Patula macrops*, which is not rare in India as in Africa.

The **Geometrids** present as few striking characteristics in the Ethiopian Region as the Noctuids. *Maeraria* and Boarmiids, the latter especially in the south, play as predominant a rôle as in the other regions.

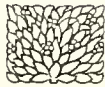
Large day-flying Geometers, recalling *Abraxas* in their pattern and colouring, are very conspicuous in tropical Africa, and to some extent replace *Euschema* of the Oriental Region. Many species and genera were formerly placed with the Bombycids, and even now many species regarded as Geometers cannot be classified with certainty owing to our ignorance of the larvae.

This gives a general idea of the families of Lepidoptera as they are suggested by a superficial consideration of the genera conspicuous by their size, form, or number of species or individuals. Naturally there is immense variation in such a fauna; in what directions will be shown in more detail in the special studies of the following chapters.





# BUTTERFLIES







## 1. Family: **Papilionidae**, Swallowtails.

Palpi in all the Ethiopian forms small, appressed to the head. The forelegs in both sexes fully developed; the foretibiae with a flat appendage («foretibial spur») placed centrally about on the innerside. The submedian of the forewing sends out from its base posteriorly a short branch which runs into the hindmargin of the wing before the middle. The hindwing with only one innermarginal vein, as vein 1a is wanting. The tarsal claws simple. — Egg rounded or somewhat flattened, without distinct sculpturing. Full-grown larva unarmed or with fleshy tubercles or simple spines placed in pairs, always with an expansible fork of a bright yellow or red colour between the head and the first thoracic segment, which has an unpleasant odour and probably serves as a means of defence. Pupa more or less angular, fastened at the anal extremity and by a girth round the middle.

Only a single genus of this family occurs in the Ethiopian Region.

### 1. Genus. **Papilio** L., Swallowtails.

For the differences between this genus of the Papilionids and those which are not represented in this faunistic region the reader is referred to the descriptions in the other divisions of the work. \*)

The species of *Papilio* form an important part of the African butterfly fauna. Some, such as *P. demodocus*, *policenes*, *dardanus*, *leonidas* and *nireus*, are distributed over the greater part of the continent and are almost everywhere common, others are confined to smaller districts, where moreover they are rare. Almost all the larvae appear to live on trees or shrubs and it is probably on this account that the butterflies occur almost exclusively in wooded districts and are wanting on the large grassy steppes. The males often congregate together with other butterflies, especially Pierids, at the edge of the water and settle in large crowds to drink. The females on the contrary are never met with in such places; they fly about less and are mostly taken fluttering round the food-plant of the larvae. This explains why the females even of quite common species are still very rare in collections. They must be sought in the forest at the food-plants, or better still, bred from the larvae.

The Ethiopian Swallowtails also can be divided into three subgenera, which are easy to differentiate as follows:

- A. The 1. subcostal of the forewing runs quite free to the costal margin.
  - α. The antennae black, without scales. The inner margin of the hindwing in both sexes flat or more or less fluted, in the ♂ always without scent-scales. Fluted Papilios.
  - β. The antennae red or reddish. The inner margin of the hindwing in the ♂ curved upwards, enclosing a quantity of pilose scaling. Aristolochia Papilios.
- B. The 1. costal vein of the forewing anastomoses soon after its origin with the costa. The inner margin of the hindwing in the ♂ turned over above, forming a fold, which encloses long spreading bristles and more or less pilose androconia. Kite Swallowtails.

#### A. Fluted Papilios.

This subgenus includes the largest of the African *Papilio*-species and indeed the largest butterflies of Africa. Of the ten groups which belong here all but the last, which is also represented in Asia, are confined to the Ethiopian Region.

#### Antimachus Group.

The abdomen long and slender, reaching to the anal angle of the hindwing. Forewing very long and narrow, at least in the ♂ twice as long as the rounded tailless hindwing. Palpi yellow. Breast spotted with yellow. Frons, vertex, pronotum and patagia each with two small light yellow spots.

**P. antimachus** Drury (1a). One of the largest of all known butterflies; described and figured from *antimachus*. a single male specimen from Sierra Leone as long ago as 1782. Not until 1864 was a second specimen brought to Europe. Now the species is fairly well represented in European collections. Forewing black

\*) See vol. I, p. 7, 8; vol. V, p. 12; vol. IX, p. 9.



with numerous angular reddish yellow spots. Hindwing above reddish yellow with a large black spot at the end of the cell and 6—7 rounded black discal spots, also with a black marginal band, deeply notched proximally, which is ornamented with yellow marginal spots at the ends of the folds between the veins. The ♂ attains an expanse of wings of 200—230 mm., the very rare ♀ is much smaller and only reaches 150 mm. The earlier stages are unfortunately entirely unknown. The ♂ flies high and swiftly and is difficult to catch. West African forest-region from Sierra Leone to the Aruwimi and Kassai. — In ab.

*gigantea*. **gigantea** Walk. the two black transverse spots in the cell of the hindwing are united and the black spots in the middle of the hindwing are almost twice as large as in the typical form, and more angular;  
*plagiata*. Gaboon. — ab. **plagiata** Stich. has the outer yellow-brown discal spots of cellules 5, 6, and 8 of the forewing enlarged and united into a transverse band; Cameroons.

### Rex Group.

The abdomen does not reach the anal angle of the hindwing by some distance. Forewing only a little elongated; hindwing rounded, tailless, with undulate margin. The wings of a black ground-colour with white spots, which are arranged quite similarly in all the forms. The forewing has two of these spots in the cell, one discal spot each in cellules 2—6 and 8, of which those of cellules 4 and 5 are small or absent, 8 submarginal spots in cellules 1b—8 and 8 marginal spots at the tips of the folds. The hindwing has a large spot in the cell which almost fills it up, one spot each in the base of cellules 1b—7, of which those of cellules 3 and 4 are small or absent, two obliquely placed submarginal spots each in cellules 1b—7, one submarginal spot in cellule 1a, and 7 single marginal spots. Head, breast and back dotted with white; abdomen with whitish lateral stripes. The species is rare, mimics certain Danaids in colour and markings and appears to occur principally only in mountainous regions. Earlier stages unknown.

*rex*. **P. rex** Oberth. (1b). In the ♂ the forewing has above two broad orange-yellow basal streaks in the cell and below it, which do not reach the white spots or barely so. On the underside these spots are larger and confluent, covering the whole basal part. Ground-colour of the hindwing above black down to the base, beneath orange-yellow at the base of the costal margin (in cellule 8). In the ♀ the whole basal part of the forewing above is orange-yellow at least as far as the first white spots. Closely mimics *Danaida formosa* Godm., occurring in the same districts, but is usually much larger, yet smaller specimens also occur. That is to say, the wing-expanse varies from 97 to 140 mm. Mountainous districts of German and British  
*mimeticus*. East Africa as far as the north-eastern corner of the Victoria Nyanza. — **mimeticus** Rothsch. (1a) differs in both sexes from *rex* in that the base of the forewing as far as the light spots and the basal part of the hindwing to beyond the middle are dark red-brown. Mimics *Danaida mercedonia* Karsch. At the north-west and north side of the Victoria Nyanza as far as the north-east corner of the lake. — There, where *Danaida*  
*commixta*. *formosa* and *mercedonia* meet together, occurs also a transition-form between *mimeticus* and *rex*, **commixta** Auriv., in which the basal colour of the forewing is more extended than in *rex*, but not so dark as in *mimeticus*. —  
*schultzei*. **schultzei** Auriv. Wings on both sides with pure black ground-colour down to the base, on the forewing a curved white longitudinal stripe in the base of cellule 1b. Forewing shorter and broader than in the preceding forms, the marginal spots larger. Represents probably the oldest form of this group, and can apparently scarcely be regarded as a mimic of *Danaida petiverana*. Discovered by Lieutenant A. SCHULTZE in North Adamaua (Cameroon district), flying among the rocks.

### Zalmoxis Group.

Abdomen not extending to the anal angle, powerfully built, almost unicolorous yellow. Hindwing uniformly rounded, without tail. Head, breast and collar dotted with white. Wings above of light blue ground-colour with black veins and black stripes between the veins. Hindwing with 2 marginal spots in each cellule. Basal cell of the hindwing large, rhomboidal. Earlier stages unknown.

*zalmoxis*. **P. zalmoxis** Hew. (1b). Forewing on both sides narrowly black at the costal and distal margins and broadly so at the apex, ground-colour grey-whitish beneath. Hindwing above with broad black marginal band and blue marginal spots, beneath with narrow marginal band and whitish marginal spots; the ground-colour of the under surface red-brown, shaded with white in the middle. — In the primeval forest region, from Old Calabar as far as the Aruwimi and Lualuaburg. — *ripponi* Rüb., with dark bronze ground-colour on the upper surface, as well as the specimens with dirty green ground-colour now and then met with in collections, are only discoloured and do not occur in nature.

### Dardanus Group.

Abdomen not extending to the anal angle. Forewing broad and short. Hindwing in the ♂ always with a long tail at vein 4, in the ♀ usually rounded and tailless, but sometimes tailed as in the ♂. Cell of the hindwing of light colour (yellow, reddish yellow, red or white), occasionally narrowly black at the base. Hindwing usually with two light submarginal spots each in cellules 1b—7. Head and thorax distinctly dotted with white at least in the dark forms. The ♀♀ are very polymorphic, and not only often quite different from the ♂♂ but also so unlike one another that for a long time they were regarded as quite different species. Moreover, both the ♂♂ and ♀♀ in



the different districts of the Ethiopian Region appear as different (geographical) races. There exist consequently a number of different forms more or less intergrading with one another which probably are best regarded as all belonging to a single species. The greater number of the female forms are excellent „mimics“ of Danaids and Acraeids. This similarity is certainly an undeniable fact, but whether it can be scientifically explained only by the current Mimicry theory must be regarded as very doubtful, if we wish to be impartial. This question has the widest biological bearings and therefore deserves to be investigated and tested from all points of view. A comprehensive investigation of the forms of the *Dardanus* Group and their development in different districts of the Ethiopian Region will certainly be of the greatest importance and scientific interest, and is urgently recommended to all those who are in a position to take it up. — Larva with two short horns on the first and last segment; segments 3—5 broader and thicker than the others; the body in consequence gradually narrowing both anteriorly and posteriorly; on the 3. segment a small eye-spot. The pupa much thickened in the middle; sharply keeled above, beneath and at the sides; the horns on the head are parallel, placed close together and curved towards the back, mesothorax moderately raised, much as in *P. machaon*; abdomen without humps.

**P. dardanus.** ♂: wings above with light ground-colour, costal margin of the forewing black as far as the cell and vein 10, apex and distal margin broadly black, usually with yellow submarginal spot only in cellule 7. Hindwing always unicolorous pale yellow to beyond the cell, then either only with black spots at the costal margin and the anal angle, or with a broad black marginal band, which encloses large submarginal spots of the ground-colour. The black markings of the upper surface are rusty brown or black-brown beneath and the hindwing has three brown lines in the cell and rusty brown streaks on the folds. — The oldest-known local race, **dardanus** Brown (2a), occurs in West Africa from Sierra Leone to Angola and Uganda. In the ♂ (= merope Cr.) the black transverse band of the hindwing is never continuous and the tail is either unicolorous yellow or has only a black longitudinal line; the fringes and the marginal spots of the hindwing are pale yellow like the ground-colour. The females are always tailless. As females belong here ♀-f. **hippocoön** F. (2b), in which all the markings are pure white and the marginal band of the hindwing almost reaches the cell; ♀-f. **heimsi** Suff., which only differs by a narrower marginal band on the hindwing; ♀-f. **nioboides** Auriv., in which the basal part of the hindwing is yellow but the markings of the forewing white; ♀-f. **trophonissa** Auriv. (2c), in which both the basal part of the hindwing and the hindmarginal spot of the forewing are reddish yellow, but the subapical band of the forewing pure white; ♀-f. **benio** Suff., in which the basal part of the hindwing and the hindmarginal spot of the forewing are pale yellow, but the subapical band white; and ♀-f. **niobe** Auriv., in which all the markings are reddish yellow to brick-red. All these forms are quite similarly marked except that in *trophonissa* the hindmarginal spot of the forewing also covers a part of the cell; in all of them cellule 3 of the forewing is unicolorous black. In a seventh female form of West Africa, ♀-f. **dionysus** Dbl. & Hew., cellule 3 of the forewing also has a white spot which unites the subapical band and the hindmarginal spot into a large white area which also covers a great part of the cell; the basal part of the hindwing in this form is gold-yellow. — In South Africa, from Cape Colony to Delagoa, occurs the race **cenea** Stoll. Both sexes are smaller on the average than specimens from West Africa. In the ♂ the black transverse band of the hindwing is usually broad and continuous, the tail black with yellow apex or yellow apical spots and the fringes ochre-yellow to rust-yellow, darker than the ground-colour; the cell of the forewing is narrowly black along the costal margin. The ♀ have rounded, tailless hindwings. The nymotypical ♀ differ from all others in that the light spot in cellule 1b is entirely or almost entirely absent, as well as the discal spot in cellule 5; the basal part of the hindwing is more or less yellowish, the spots of the forewing are usually yellowish, but sometimes white, this being the case in ♀-f. **acene** Suff. (2b). In ♀-f. **cephonius** Hopff. the discal spot 5 of the hindwing is present and forms with spots 4 and 6 a yellow subapical band. A fourth form, ♀-f. **hippocoönoides** Haase (2b), is marked like *hippocoön*, but has a narrower marginal band on the hindwing, sharply defined proximally, short or absent streaks between the veins and a smaller subapical band on the hindwing. The ♀-f. **trophonius** Westw. only differs from *trophonissa* in that the marginal band of the hindwing is narrower, the streaks between the veins on the hindwing are short or absent and the cell of the forewing is not red at the hindmargin. — In East Africa, from Delagoa Bay to British East Africa, is found the race **tibullus** Kirby (2a). The ♂♂ scarcely differ from the ♂♂ of *cenea* and intergrade into this form in the south without any sharp boundary-line; the fringes of the hindwing are pale yellow like the ground-colour, not rust-yellow. As aberrations belong here ♂-ab. **maculatus** Suff., in which the forewing has also a pale yellow submarginal spot in cellules 1b—6, and ♂-ab. **discopunctatus** Suff., in which the forewing has a black streak at the end of the cell. The tailless ♀ approximates very closely to the ♀-f. *hippocoönoides*, but has a larger apical band on the forewing and the streaks between the veins on the hindwing are short or entirely absent. The ♀-f. **salaami** Suff. corresponds to the West African ♀-f. *niobe* and has all the markings yellow to brick-red. — In the high-lying districts of the interior of German and British East Africa, at the south and east sides of the Victoria Nyanza as far as Kavirondo, occurs a fourth local race, **polytrophus** R. & J. (= boosi Suff.). The ♂♂ agree to some extent with the ♂♂ from West Africa, but are smaller and are distinguished by the large black spot in cellule 1b of the hindwing enclosing a distinct pale yellow spot. The ♀ are tailless, but otherwise so variable that one might think that all the ♀-forms of *dardanus* had met together in this neighbourhood. The ♀-f.



- dionysoides*. **dionysoides** *Auriv.* comes the nearest to the ♂ of all the tailless ♀-forms: the hindwing has a pale yellow ground-colour, which covers the greater part of cellules 1a–3 and the inner part of cellules 4–6 and 8 as well as also a great part of the cell; consequently the black colour occupies almost the same extent as in the ♂; in cellules 1b, 2, 3 and 7 are large light submarginal spots. The hindwing has a similar or more ochre-yellow ground-colour and a narrow black marginal band with large submarginal spots, which are placed nearer to the inner margin of the band than to the distal margin and are sometimes even united with the ground-colour. ♀-f. **trimeni** *Poult.* has a whitish yellow or light yellow ground-colour, and is at once distinguished from *dionysoides* by the fact that the hindmarginal spot is separated by a black interspace from the subapical band; the submarginal spots of the hindwing are smaller and placed nearer to the margin. In a third form, ♀-f. **pemptolipus** *Auriv.*, the hindmarginal spot of the forewing only covers cellules 1a, 1b and 2, not the hindmargin of the cell, and the light spot in cellule 5 is absent. In ♀-f. *planemoides*. **planemoides** *Trim.* the light (usually reddish yellow or yellow) spots of cellules 1a–6 and 8 of the forewing form a continuous transverse band, which nevertheless does not cover the base of cellules 1a–3 and therefore is not broader posteriorly. The marginal band of the hindwing is very broad and often almost reaches the cell. ♀-f. **mixta** *Auriv.* only differs from *planemoides* in the absence of the light spot in cellule 3 of the forewing; the transverse band is consequently broken up into two spots as in ♀-f. *trimeni*, from which *mixta* differs in that the hindmarginal spot is small and does not reach the base of cellules 1a–2. Besides these *polytrophus* has ♀-forms which can scarcely be distinguished from *hippocoon*, *tibullus* and *cenea*. — *antinorii*. In Abyssinia and the adjoining parts of Somaliland occurs another local race, **antinorii** *Oberth.* The ♂ (2a) resembles the ♂ of *dardanus* and *polytrophus*, but has the black markings much more reduced, so that the base of cellule 7 of the forewing is broadly yellow. The ♀♀ are always tailed like the ♂♂ and the principal form (2a) also agrees closely with the ♂♂ in colour and markings, except that the cell of the forewing has at the costal margin a black streak which is enlarged at its apex into a hook. ♀-f. *niavoides* *Kheil*. *ruspina*. agrees in colour and markings with ♀-f. *tibullus*, in ♀-f. **ruspina** *Kheil* on the contrary the basal part of the hindwing and the hindmarginal spot of the forewing are brick-red, the remaining spots of the forewing as well as the large submarginal spots of the hindwing white; the hindmarginal spot of the forewing also covers a part of the cell as in ♀-f. *trophonissa*; thus ♀-f. *ruspina* differs essentially from *trophonissa* only in the long tail of the hindwing. — In the two following island forms the sexes are similar and there is only one ♀-form known: the latter is tailed and only differs from the ♂♂ by a black stripe at the costal margin of the cell of the forewing as in *antinorii*-♀ (2a). The island forms are: **meriones** *Fldr.*, from Madagascar: coloured and marked almost like *tibullus*-♂, but the transverse band is broken up into spots and the tail black, yellow at the tip; this form is distinguished from all others by the fact that the marginal band of the forewing between veins 5 and 8 is cut off almost straight proximally and at vein 8 is broken rectangularly, leaving the base of cellule 7 free. — **humbloti** *Oberth.* (9b), from Great Comoro, is distinguished from all the other *dardanus*-forms in that the hindwing has a black marginal band about 8 mm. broad, without spots, and an entirely black tail.

### Zenobia Group.

Abdomen not reaching the anal angle of the hindwing. Wings above black with white or yellow markings. Cell of the hindwing above at the base more or less coloured with black, often to beyond the middle. Hindwing rounded, tailless or only shortly angled at vein 4, beneath at the base ochre-yellow to red-brown with black longitudinal stripes. Early stages unknown. — The species can be divided into two sharply separated subgroups.

#### 1. Subgroup.

The black basal longitudinal stripe in cellule 7 of the underside of the hindwing is thickened and is interrupted in the middle, so that it forms 2 spots. The ♀♀ are quite different from the ♂♂ in all the species except the last. In the ♂♂ the bases of cellules 1b to 4 (to 6) and veins 2 to 5 on the forewing above are thickly covered with pilose hairs. The wings in the ♂ have a common white or yellowish discal band, which on the forewing is more or less broken up into spots, but on the hindwing is continuous and often widened.

- echerioides*. **P. echerioides** *Trim.* (2c ♂). Transverse discal band yellowish; discal spots 2–5 of the forewing more or less rounded, never square. Forewing without submarginal spots, hindwing with 6, which are placed close to the margin or even united with the marginal lunules. ♀: forewing with only 3 discal spots, in cellules 2, 5 and 6, a spot in the cell and 5 submarginal spots (in 1b–3, 5 and 8; the last touching the margin), white; hindwing with large, rounded, yellow central area, which covers the greater part of the cell and the base of cellules 1c–6, and with 6–7 white submarginal spots, placed close to the margin. *rideschi*. Cape Colony to German East Africa. In ♂-ab. **rideschi** *Suff.* the discal spot of the forewing is absent; *wertheri*. Kilima-Njaro. ♀-ab. **wertheri** *Karsch.*: hindwing with a white spot between the central band and the submarginal spots in cellules 5 and 6. German East Africa. — **oscari** *Rothsch.* The black basal area of the hindwing of the ♂ above extends beyond the base of vein 2, the light transverse band is therefore narrower. *leucospilus*. ♀: all the markings of the upper surface yellowish. Abyssinia. — **leucospilus** *Rothsch.* ♂: the black basal



area of the hindwing above just reaches vein 2; the black basal longitudinal stripe in cellule 7 of the hindwing beneath narrow. ♀: all the markings of the upper surface white. Abyssinia.

**P. fuelleborni** *Karsch* (2c). ♂: central band of both wings white, narrow on the forewing, only *fuelleborni*. 6 mm. broad posteriorly, on the hindwing 12—14 mm. broad and rounded distally. Both wings entirely without submarginal spots, but with distinct marginal lunules. ♀: forewing above with pure white spots, arranged as in *jacksoni*-♀, except that the submarginal spot in cellule 8 is placed at the margin. The large median spot of the forewing yellowish white or ochre-yellow; all the submarginal spots placed at the margin and united with the white marginal lunules. — German East Africa; in the interior.

**P. sjoestedti** *Auriv.* ♂: wings above deep black without submarginal spots; the white median *sjoestedti*. band very narrow, on the hindwing only 3.5—5 mm. broad, almost uniform in width, on the forewing composed of 8 small, widely-separated spots; the white marginal lunules very distinct, especially on the hindwing; the deep brown basal area of the hindwing beneath reaches the apex of the cell and is bordered distally by a fine white line. The ♀ differs above from *jacksoni*-♀ only in that the submarginal spot 8 of the hindwing is linear and long, and reaches the margin, and that the submarginal spots of the hindwing are small and completely united with the marginal lunules. There is a white spot in the middle of cellule 5 of the hindwing; the brown basal area of the hindwing beneath is much smaller than in the ♂ and arched at the distal side. — German East Africa: Meruberg.

**P. jacksoni** *E. Sh.* (♂ 2d, ♀ 3a). The white median band of the hindwing 5—8 mm. broad; the *jacksoni*. submarginal spots 4—6 mm. from the margin; the brown basal area of the hindwing beneath only reaches the base of vein 2. ♀: the submarginal spots all more or less removed from the margin and the one in cellule 8 of the forewing short and rounded, about 4 mm. from the margin. — German East Africa: Imbo-Urundi; British East Africa: Kikuyu, Kavirondo, Ruwenzori.

**P. zoroastres**. In the ♂♂ the median band is usually pure white, 10—13 mm. broad at the hind margin of the hindwing, almost rectilinear on both sides and gradually narrower anteriorly; the spots of the forewing are larger than in the preceding species and the spot in 1b is about 10 mm. broad; the submarginal spots of the hindwing are nearly always present and are not united with the marginal lunules. In the ♀ the submarginal spot 8 of the hindwing is placed very near to the margin or quite reaches it; the submarginal spots of the hindwing are present and all or almost all removed from the margin. — In the first described form, **zoroastres** *Druce*, the markings of the upper surface in the ♂ are pure white; the forewing with no spot *zoroastres*. in cellule 6, but with a small submarginal spot in cellule 5; the hindwing with 4 small free submarginal spots. ♀ unknown. Fernando Po and Cameroons. — In **preussius** *Karsch* the ♂ has on the upper surface *preussius*. a yellowish white median band; forewing with a small discal spot in cellules 6 and 8, but without submarginal spots; hindwing with 3 free submarginal spots. ♀: forewing also with a small submarginal spot in cellule 6; all the spots of the forewing above as well as the large spot in the basal cell of the hindwing yellowish white. Cameroon Mountains: Buea. — **homeyeri** *Plötz* (♂ 2d, ♀ 3a). The ♂ has the markings *homeyeri*. pure white; forewing with an oblong basal spot in cellule 6, almost reaching the small discal spot, and with a spot in the cell near to its apex; hindwing with or without submarginal spots. In the ♀ the forewing has no submarginal spot in cellule 6; the discal area of the hindwing is yellow or pure white. Angola; Congo region; German East Africa; Uganda.

The two following species are remarkable for the great difference between the ♂♂ and ♀♀, the latter being quite unlike the ♀♀ of the preceding species. It is worthy of note in the ♂♂ that the band of the forewing is much broader, in cellule 1b 20—24 mm. broad, only becomes gradually narrower anteriorly and consists of spots which are more rectangular and only narrowly separated in cellules 1a—5. Markings of the upper surface white or in the ♀ pale yellowish.

**P. cynorta** *F.* (2d). Both wings above and beneath without submarginal spots. ♂: median band *cynorta*. of the hindwing above 12—15 mm. broad; forewing with 8 spots in 2a—7, of which the spots in 1b—5 are elongated or obliquely cut off distally, whilst those in 6 and 7 are much shorter and smaller; those in cellule 7 are placed nearer to the margin than those in 3—6. In the ♂-ab. **norcyta** *Suff.* (2d) the spot *norcyta*. in cellule 6 is absent. The ♀, of which a small, somewhat aberrant specimen is figured on 2d, has a white or whitish median band on the hindwing, indistinctly defined distally, a hindmarginal spot of the same colour in cellules 1a—2(—3) of the forewing and a larger or smaller subapical band on the forewing, which consists of 5 spots in cellules 4—6, 8 and in the apex of the cell. West Africa, from Sierra Leone to Angola and Uganda. — In ♀-f. **peculiaris** *Neave* the spots are cream-yellow and the median band of the *peculiaris*. hindwing is absent or only indicated by a spot in cellule 7. Uganda.

**P. plagiatu**s *Auriv.* ♂ very similar to the ♂ of *cynorta*, but the median band of the hindwing *plagiatu*s. almost rectilinear on both sides, the spots of cellules 1a—5 of the forewing still longer and distally rounded; the spot in cellule 6 is absent and the spot in cellule 7 is nearer to the margin than those of cellules 2—4. The ♀ shows no light spots at the hindmargin of the forewing, but a large white central area, which



consists of a large spot in the apex of the cell, three large spots in cellules 2—4 and 2—3 small spots in cellules 5 and 6; nearer to the margin are sometimes 4—5 small white submarginal dots. The hindwing has a large white central area, which is cut off straight basally, but is rounded distally. In the Cameroons and the northern districts of the Congo State.

- zenobia*. **P. zenobia** F. (3b). Both sexes similarly coloured and marked. The white or whitish median band is continuous as far as vein 6 of the forewing, its proximal edge being almost straight; spots 2—4 of the forewing sharply pointed distally; cellule 6 of the forewing usually unicolorous with no spot. sometimes — ab. **nobicea** Suff. — with a spot which unites the small spot always present in cellule 7 with the median band. In the ♀ there is also a small spot in the apex of the cell of the forewing; in ab. *nobicea* this spot also occurs in the ♂. The median band of the hindwing is usually 12—15 mm. broad, *odenatus*. but may also be only 8—10 mm.; this form has been named **odenatus** Westw.

## 2. Subgroup.

The black longitudinal stripe between the veins in the brown basal part of cellule 7 of the hindwing is, as is shown in fig. 1c, linear and continuous. The sexes are similarly coloured and marked. Hindwing without submarginal spots, but with a white or light yellow median band, which usually extends to vein 9 or 10 of the forewing, but in *andronicus* only to vein 6.

- andronicus*. **P. andronicus** Ward. The snow-white median band only reaches vein 6 of the forewing; in the middle of cellule 7 of the forewing a square white spot, the ♀ bearing moreover another spot in the lower angle of the cell. Both wings with small white marginal lunules between the ends of the veins. Cameroons.
- mechowianus*. **P. mechowianus** Dew. (= *andocides* Gr.-Sm.) (3a). Marginal lunules of both wings small. Median band broad, in the middle of the hindwing 13—16 mm., at the costal margin of the forewing distinctly curved basad, enclosing the end of the cell; the spot in cellule 7 is placed at the base of the cellule. is very small and does not extend nearer to the margin than the spot in cellule 6. In the ♂ the spots of cellules 1a, 2, 3 and 4 are broadly divided into triangles on the inner side by the pilose hairs. — Congo region and Angola.
- cypraeofila*. **P. cypraeofila** Butl. (1c). The marginal spots of the hindwing very large, much longer than broad at the margin, elliptical or circular; markings of the upper surface yellowish white; hindwing with rounded margin and a median band 8—10 mm. broad. In the form first described the median band consists of 9 spots in 2a—8. Sierra Leone to the Cameroons. In ab. *filaprae* Suff., from the Cameroons, the spot in cellule 8 of the forewing is wanting, and in ab. *praecyola* Suff., from the Cameroons, there is a white spot in cellule 5 of the hindwing beneath, distally to the median band.
- gallienus*. **P. gallienus** Dist. (1c). Marginal spots of the hindwing as large as in the preceding species or even larger; all the markings of the upper surface light sulphur-yellow; hindwing with the margin distinctly angled at vein 4; median band of the forewing composed of 9 spots in 1a—8, on the hindwing only 3—6 mm. broad. Cameroons and Congo region. — *whitnalli* Neave, from Uganda, has a somewhat broader median band, but is otherwise scarcely different from the nymotypical form.

## Nobilis Group.

Abdomen not reaching the anal angle of the hindwing. Hindwing tailed at vein 4. Body without light dots or spots. Wings above light ochre-yellow with rust-brown markings at the margin. The only species which belongs here shows affinities both with the *dardanus*-group and the first species of the following group. Sexes similar.

- nobilis*. **P. nobilis** Rog. (4c). The rust-brown marginal band of the forewing is continuous from the costal margin at least to vein 3 and encloses two spots of the ground-colour in cellules 7 and 8; then follows a marginal spot at the end of vein 2; the base is likewise more or less broadened. The hindwing has usually rust-brown marginal spots at the extremities of the veins and the tail is entirely rust-brown; sometimes rust-brown submarginal spots also occur in cellules 2 and 3. — In the northern districts of German East Africa and in British East Africa; a decided form of the steppes.

## Hesperus Group.

Abdomen not reaching the anal angle of the hindwing. Wings above black with whitish or yellow markings. Hindwing above black at the base, with a long tail at the end of vein 4. Sexes very little if at all different. Early stages unknown.

- P. hesperus**. Tail of the hindwing unicolorous black. Wings with a common whitish median band, extending from the middle of the abdominal margin of the hindwing to vein 4 of the forewing, the spot of the same in cellule 2 of the forewing is at least double as long as the spot in cellule 1b. The median band of the hindwing covers neither the apex of the cell nor the bases of cellules 4 and 5; its spots distally



cut off transversely. Forewing of the ♂ without pilose spots; ♀ with 1—2 red spots at the anal angle of the hindwing, which are wanting in the ♂. — **hesperus** Westw. (4 b). Hindwing with a large submarginal spot in cellules 3 and 4 and much smaller one in 6 (and 7), thus with no spot in cellule 5; forewing without discal spots in cellule 4, but with a subapical band of 3—4 spots in cellules 5, 6, 8 (and 9) and a submarginal spot in cellule 8. West Africa, from the Ivory Coast to Angola and Uganda. In ab. **maculatissima** Suff. the forewing has a discal spot in cellule 4 and the hindwing a submarginal spot in cellule 2, but no spot in 5; Cameroons. — **horribilis** Btlr. Hindwing with 5 fairly equally large submarginal spots in cellules 3—7; forewing without discal spot in cellule 4. Ashanti, and in the interior of the Cameroons.

**P. pelodurus** Btlr. (4 b). Only differs essentially from *hesperus* in that the median band of the hindwing covers the apex of the cell as well as the base of cellules 3—5; hindwing with 5—6 submarginal spots (in cellules 2—7), of which those of cellules 3—6 are almost equally large. Both sexes with a red spot at the anal angle of the hindwing. — Nyassaland and German East Africa.

**P. euphranor** Trim. (9 a). The yellowish median band does not cover the apex of the cell of the hindwing (but is there accompanied by 3 small spots in cellules 3—5) and is composed on the forewing of 9 spots (in cellules 1 a—6, 8, 9); the spot in cellule 2 is not larger than that in 1 b; the hindwing above with 2 (♂) or 4 (♀) submarginal spots in each cellule; frons with two light dots; forewing in the ♀ with a complete transverse row of 8 submarginal spots, curved somewhat in S-shape. — From Kaffirland to the Transvaal.

**P. constantinus** Ward (4 c). Wings beneath at the base with distinct black longitudinal streaks in the cell and in cellule 7 of the hindwing. Both wings above with yellowish spots, two in each cellule. Forewing with a light spot in the cell. The median band narrow, but complete, not covering the apex of the cell of the hindwing. Veins 1—5 of the forewing in the ♂ covered on both sides with shiny pilose hairs. — From Natal to Abyssinia.

**P. mackinmoni** Em. Sharpe (4 c). Both wings above only with a narrow transverse band, which on the hindwing is directed towards the end of vein 2, and stands far beyond the cell; forewing in the typical form also with a yellow spot in the base of cellule 8. German East Africa (in the interior), British East Africa, Ruwenzori. ab. **immaculatus** Suff. has no spot in the base of cellule 8 of the forewing. In ab. **bimaculatus** Suff. the forewing has a yellow spot in the base of cellule 6 as well as cellule 8.

**P. delalandei** Godt. (6 b). Tail of the hindwing with a light spot at the tip; the median band, which is whitish in the ♂ and yellow in the ♀, covers only the apex of the cell on the hindwing, is directed towards the anal angle and distally produced into long teeth on the veins; the hindwing has large marginal spots but no submarginal ones; the forewing has a perfectly straight row of 8 small submarginal spots, rounded or oval; the cell of the forewing with a transverse spot before the apex, which in the ♂ is broad and blue-grey, in the ♀ narrow and yellowish; veins 1—4 of the forewing in the ♂ very broadly covered with pilose hairs. — Madagascar.

### Phorcas Group.

Wings above black with green, greenish yellow or light markings, which are yellowish in the ♀. Hindwing with a long tail at vein 4. The median band of the hindwing does not cover the extreme tip of the cell, but is often accompanied by small spots at the base of cellules 3—5 and in the ♂ and the similar form of the ♀ reaches very nearly to the base of the cell. In the ♀ the submarginal spots are present on both wings and often two in each cellule, in the ♂ usually only the spot in cellule 7 of the forewing is distinct and green. Forewing in the ♂ without pilose hairs. ♀ dimorphic; one form is similar to the ♂ and has green markings, the other closely approaches the species *euphranor* and *constantinus* of the preceding group; it has yellowish markings and a narrow median band, which does not reach the base of the hindwing by some distance. Distinguished from the species of the preceding group by the large light lateral spots of the tail-appendage.

**P. phorcas**. Cell of the forewing unicolorous black, without spots. — **phorcas** Cr. (6 c). Median band broad and vivid green, reaching the base of the hindwing and the proximal part of cellules 2—9 of the forewing, the spot in cellule 5 of the forewing present, but bounded anteriorly by the fold of the cellule and consequently not reaching vein 6. Submarginal spots 1—6 of the forewing entirely absent in the ♂. The discal spot in cellule 4 of the forewing only 5—5½ mm long. Sierra Leone to the Niger; Ruwenzori. ♀-f. **thersander** F. (6 c) has a light yellowish white median band, only about 7 mm broad on the hindwing, which leaves the base of this and of cellules 2 and 3 of the forewing free; discal spot 5 of the forewing present. — **congoanus** Rothsch. is larger than *phorcas* and with a broader median band, the spot of which in cellule 4 of the forewing is 7—10 mm long; otherwise not different. Cameroons, Congo and Uganda. — **ansorgei** Rothsch. (= *tippelskirchi* Suff.) (6 c) differs from *phorcas* by the complete absence of the discal spot in cellule 5 of the forewing; also the submarginal spots are distinct in the ♂. British East Africa; Uganda. ♀-f. **thersandroides** Auriv. Corresponds to the ♀-f. *thersander* of *phorcas* and differs from it only by the absence of the discal spots in cellule 5 of the forewing. — **nyikanus** R. & J. (♀ = *leopoldi* Suff. ?). Discal spot in



cellule 5 of the forewing present, but small; that in cellule 6 very small, not larger than the one in cellule 7. Nyassaland and German East Africa. — *casphor* Suff. Discal spot of the forewing in cellule 5 large, reaching vein 6; the median band therefore quite continuous; otherwise marked like *phorcas* and *congoanus*. German East Africa: Tabora.

*nandina*. **P. nandina** R. & J. Forewing with a large light spot in the cell which is contiguous to the discal band; the latter light yellowish, somewhat suffused with greenish, and with two spots in cellule 5 of the forewing; otherwise marked exactly like *phorcas*. — British East Africa.

### Nireus Group.

Abdomen not reaching the anal angle of the hindwing. Wings above black with blue or greenish markings. Hindwing at vein 4 angled or tailed. Body beneath black, with or without white dots. Frons dotted with white. The ♂♂ without pilose patches. The median band, which is only entirely wanting in the ♀ of *phorbanta*, is directed towards the anal angle of the hindwing and there almost always bounded by vein 1 b; it never reaches the base of the hindwing. The larva is thickened at the third segment, and thence narrowed quickly anteriorly and gradually posteriorly; the first and last segment have each two widely separated spines. The pupa has a two-pointed head and a tall protuberance on the mesothorax, viewed from above it is very angularly widened at each side of the second abdominal segment.

#### 1. Sub-Group.

Hindwing at vein 4, with a distinct free tail, at least 6 mm long, which when not otherwise mentioned is unicolorous black.

*mangoura*. **P. mangoura** Hew. Tail of the hindwing with a white tip; hindwing beneath with light median band, but without submarginal spots; the discal spot at the costal margin of the forewing above (blue in the ♂, yellow in the ♀) is deeply forked, having also a spot near to the apex of the cell; forewing with an almost straight row of 7 blue (♂) or light yellowish (♀) submarginal spots in cellules 2—8; hindwing above without submarginal spots, but with white (♂) or yellowish (♀) marginal lunules, which are very large in the ♀. Closely allied to *P. delalandei*. — Madagascar.

*charopus*. **P. charopus** Westw. (6 a). Apex of the forewing produced and the distal margin therefore distinctly excised at the end of veins 5 and 6; forewing beneath with four large yellowish submarginal spots in cellules 1 b—4; the blue median band of the upper surface gradually and very considerably widened posteriorly, so that the spots of cellules 2 and 3 of the hindwing are very long and cover much more than half their cellules; the submarginal spots of the hindwing beneath of the ground-colour and consequently only indicated by their silver rings. — Ashanti to the Cameroons.

*hornimani*. **P. hornimani** Dist. (6 a) only differs from the preceding species in that the median band of the upper surface is only a little widened posteriorly, so that the spots of cellules 2 and 3 of the hindwing cover but a third or a quarter of the cellules and are scarcely twice as long as broad; the submarginal spots of the hindwing beneath in the ♂ yellow, very prominent, in the ♀ as in *charopus*. — German East Africa.

*oribazus*. **P. oribazus** Bdv. (6 a). Distal margin of the forewing almost straight; forewing beneath with violet or whitish submarginal spots in cellules 1 b—4; median band of the upper surface almost equally broad and continuous at least to vein 5 of the hindwing; the discal spot in cellule 2 of the hindwing does not cover the extreme base of the cellule and that of cellule 1 c does not reach the cell. — Madagascar.

*epiphorbas*. **P. epiphorbas** Bdv. (6 b) differs from *oribazus* in the blue or greenish median band of the upper surface being completely wanting in cellules 1 a and 1 b of the forewing (♂) or at least interrupted in cellule 1 b (♀), and in the forewing beneath having no submarginal spots. The discal spot in cellule 2 of the hindwing above reaches the base of the cellule and that of cellule 1 c the cell; in the ♂ occur on the under surface of the hindwing at least 1—2, usually several very prominent yellow submarginal spots. The larva is said to be unicolorous green without markings. — Madagascar.

#### 2. Sub-Group.

Hindwing broadly produced between veins 2 and 4 and at vein 4 with a more or less sharp angle or lobe, but with no free tail; in *phorbanta*, where this lobe is the longest, it only measures 3 mm. The submarginal spots of the hindwing beneath are sharply defined in the ♂, gold-yellow to white, in the ♀ indistinct, cloudy, white.

*phorbanta*. **P. phorbanta** L. (= *disparilis* Bdv.) (6 b ♀). The blue median band of the upper surface either wanting altogether (♀) or at least in cellules 1 a and 1 b of the forewing (♂); in the ♂ it is produced into a point towards the anal angle of the hindwing; the submarginal spots of the upper surface in the ♂ are blue and are absent on the forewing, in the ♀ large and whitish and present on both wings. Larva above



vivid green with yellow lateral line and curved yellow transverse line on segment 3, beneath silver-white. Pupa greenish. Bourbon. — **nana** Oberth. is a smaller local race, which occurs on the Seychelles.

*nana.*

**P. manlius** F. (= *phorbanta* Bdv.). The discal band of the forewing in both sexes only composed of three spots (in cellules 3, 4 and in the cell); that of the hindwing short, only covering the base of cellules 2 and 3 and there obliquely cut off; both wings above with blue submarginal spots; the forewing of the ♂ has, however, only very few of these. — Mauritius.

*manlius.*

**P. nireus**. Forewing above at most with two blue submarginal spots in cellules 7 and 8; rarely in the ♀ with several yellow ones; the blue (♂) or greenish (♀) median band is 2—7 mm broad at the hindmargin of the forewing and 4—12 mm in the middle of the hindwing, and is only a little widened posteriorly; the spot in cellule 2 of the hindwing does not completely cover the base of the cellule and the narrow spot in cellule 1c does not reach the cell; forewing beneath almost always entirely without submarginal spots. — **nireus** L. (5 a). Median band of the forewing above well developed, the spots of cellules 2—4 obliquely cut off distally; the discal spot in cellule 2 of the hindwing is very long and produced farther towards the anal angle than the spot in cellule 1c. Sierra Leone to Angola and Uganda. — **lyaeus** Dbl. (5 b). The median band narrower, but complete; the spot in cellule 2 of the hindwing is shorter and does not reach so far towards the anal angle as the one in 1c. Larva above green, beneath whitish, with a whitish oblique longitudinal streak at each side on segments 7 and 8 and a girdle of ring-shaped spots on the third segment. Cape Colony to Angola and British East Africa. ♂-ab. **aelyus** Suff. only differs from *lyaeus* in the discal spot in cellule 1a of the forewing being entirely wanting and the one in cellule 1b divided into two; German East Africa. — **pseudonireus** Fldr. (= *donaldsoni* Em. Sharpe) (6 a). The median band is altogether absent on the forewing or is only represented by a few very small spots; on the hindwing it is formed as in *lyaeus*. Somaliland and Abyssinia. — **aristophontes** Oberth. The ♂ only differs from *nireus* in that the discal spots of cellules 2 and 3 are longer and sharply pointed distally; the ♀ on the contrary is quite different, the submarginal spots of both wings above and beneath are well developed and yellowish, the median band of the upper surface is greenish yellow and the ground-colour of both wings brown. Great Comoro Island.

*nireus.*

*lyaeus.*

*aelyus.*

*pseudo-nireus.*

*aristophontes.*

**P. sosia** R. & J. Forewing above in cellules 1b—8 with distinct, small, usually double submarginal dots, but beneath without large submarginal spots; the median band formed almost as in *nireus*, though the spot in cellule 2 covers the base of the cellule, but is more produced anally than the spot in 1c, which does not reach the cell. — Sierra Leone to the Congo region and Uganda.

*sosia.*

**P. aethiops** R. & J. Forewing above without blue submarginal dots in cellules 1b—6, but beneath with large yellowish submarginal spots in cellules 1b—4; the blue median band of the upper surface of almost equal breadth on the forewing and distally indented at the veins, on the hindwing narrower than in *brontes* and not covering the base of cellule 2, the spot in 1c quite short, not reaching the cell. — Somaliland and Abyssinia.

*aethiops.*

**P. thurau** Karsch. Both wings above black-brown without median band, but with blue submarginal spots and the forewing also in the middle between the apex of the cell and the distal margin with three small blue spots in cellules 3, 4 and 6; forewing beneath with four large yellowish submarginal spots in cellules 1b—4. — German East Africa: Ubenä.

*thurau.*

**P. cyclopis** R. & J. The median band of the upper surface much narrowed and on the forewing broken up into spots; the spot in cellule 2 of the hindwing does not cover the base of the cellule and the spot in 1c does not reach the cell; forewing beneath with large yellow submarginal spots in 1b—4. Perhaps only a form of *thurau*. — Nyassaland.

*cyclopis.*

**P. bromius**. The blue or greenish median band of the upper surface is broad, 10—14 mm. broad at the hindmargin of the forewing, 10—17 mm. in the middle of the hindwing and distinctly widened posteriorly; the spot in cellule 2 of the hindwing always completely covers the base of the cellule and the spot in 1c is very long and always reaches the cell. — **bromius** Dbl. (5 b, c). The green-blue spot in the cell of the forewing above reaches basad at least to the middle of cellule 2; forewing beneath without large yellowish submarginal spots, at the most with a few small spots near to the margin. Sierra Leone to the Congo region and Equatoria. — **chrapkowskii** Suff. (5 c). The blue spot in the cell of the forewing above reaches basad about to the middle of cellule 2; forewing beneath with large yellowish submarginal spots in cellules 1b—4. British East Africa: Nairobi. — **brontes** Godm. (5 a). The blue median band of the upper surface is somewhat narrower than in *bromius* and the spot in the cell of the forewing reaches basad at most to vein 3; forewing beneath with large yellowish submarginal spots in cellules 1b—4. German and British East Africa.

*bromius.*

*chrapkowskii.*

*brontes.*

#### Demoleus Group.

Abdomen not reaching the anal angle. Hindwing on both sides at the anal angle in cellule 1c with a black, blue and red eye-spot and at least beneath also with a similar eye-spot at the costal margin in cellule 7. Wings blackish with light yellow median band and light yellow submarginal and marginal spots. Larva with a



short spine at each side on the first and the penultimate segment. Pupa with two-pointed head and a hump on the mesothorax directed forwards.

*demoleus.* **P. demoleus** L. (see part I, vol. I, pl. 6 b). Differs from *demodocus* among other distinctions in the eye-spot at the anal angle of the hindwing being almost entirely red-brown. This species, which is very common in the Indian Region, also occurs in Arabia at Muscat.

*demodocus.* **P. demodocus.** Wings above blackish with yellow markings, which are arranged as the figure (4 a) shows; the basal half of the cell of the forewing above with a transverse row of small yellow dots; the discal spots of cellules 2 and 3 of the forewing irregularly angular; the red submarginal spot in cellule 1 c of the hindwing, which forms the outer part of the eye-spot, borders directly the yellow marginal spot of this cellule. — **demodocus** Esp. (4 a). Hindwing at vein 4 with only a somewhat longer tooth than at the other veins; the light spots of the upper surface sulphur-yellow; the black apex of the cell of the hindwing not separated from the ground-colour. Common everywhere in the Ethiopian Region, only rare in Madagascar and perhaps introduced there. ab. **docusdemo** Suff. has the light spots of the upper surface larger and the black apex of the cell of the hindwing completely enclosed by sulphur-yellow spots in the base of cellules *doeusdemo.* 2—6; German East Africa: Tabora. In ab. **albicans** Suff. the markings of the upper surface are white; *albicans.* **nubila.** The form with tan-coloured spots on the upper surface, ab. **nubila** Capr. (4 a), is only founded upon *nubila.* specimens which have darkened through discolouring. — In **bennetti** Dixey the spots of the upper surface are *bennetti.* much smaller than in *demodocus* and completely separated on the forewing; the median band of the hindwing is only 4 mm broad in the cell; hindwing with a short tail at vein 4. Socotra Island.

*erithonioides.* **P. erithonioides** Smith (9 b). Basal half of the cell of the forewing with a transverse row of small yellow dots; the red submarginal spot in cellule 1 c of the hindwing, placed behind the blue-bordered eye-spot, is almost completely separated from the yellow marginal spot of this cellule by a square black spot; hindwing in the ♂ only with a lobe, in the ♀ with a tail; the markings of the upper surface light yellow and arranged as in *demodocus*. — Madagascar.

*morondavana.* **P. morondavana** Smith. Basal part of the forewing above only uniformly sprinkled with yellow scales; discal spots 2 and 3 of the forewing elliptically rounded off; hindwing tailed at vein 4; otherwise very similar to *demodocus*. — Madagascar.

*menestheus.* **P. menestheus.** Hindwing at vein 4 with a tail 14—20 mm long, which has light yellow spots at each side before the broadened tip. Wings with a common light median band, which on the forewing is more or less broken up into spots, and with light submarginal spots, of which those of cellules 1 b—7 of the forewing are of equal size and placed in a straight line, and those of cellules 1 c and 7 of the hindwing are red. Frons black with two yellow longitudinal lines. Forewing in the ♂ above with broad pilose stripes at veins 1—4. — In **menestheus** Drury the markings of the upperside are light yellow; the median band of the forewing is distinctly curved basad at the costal margin, as the spot of cellule 7 is placed in the base of the cellule and that of 8 for the most part before the point of origin of vein 8; discal spots 1 a—6 of the forewing *pygmaeus.* distally pointed or rounded; forewing 59—67 mm long. Sierra Leone to the Cameroons. ab. **pygmaeus** Auriv. has the markings of the upper surface white, and the forewing is only about 45 mm long; Cameroons. — *lormieri.* **lormieri** Dist. (8 b) differs from *menestheus* in that the median band of the forewing runs in almost a straight line to the costal margin, as the discal spot in cellule 7 is placed beyond the base of the cellule and the spot in 8 entirely or for the most part beyond the point of origin of vein 8. Gaboon, Congo region; Madagascar. — *ophidicephalus.* **ophidicephalus** Oberth. (8 a) is a form which is regarded by many authors as a separate species. It approaches the name-typical *menestheus* very closely, and can hardly be sharply differentiated from it; the yellow markings are somewhat larger, the median band of the forewing is therefore somewhat more continuous and appears widened at the costal margin, as the spots in cellules 7 and 8 are usually larger than in *menestheus*; the discal spots 2—6 of the forewing are usually almost obliquely cut off distally, though sometimes rounded just as in *menestheus*; the submarginal spots of the forewing beneath are enlarged and form an almost continuous submarginal band; the eye-spots of the hindwing are somewhat larger and more distinct. *phalusco.* **phalusco** Suff. is distinguished by having the discal spots 7 and 8 of the forewing so much prolonged distad that the median band forms a straight line; Natal.

## B. Aristolochia Papilios.

Of this division, which is represented in Asia and America by numerous forms, only a single species occurs in the Ethiopian region. It is therefore sufficient here to refer to the characteristics of this group as given in treating of the other faunistic regions.<sup>1)</sup>

*antenor.* **P. antenor** Drury. (9 c). Tail, head and collar red; abdomen whitish, more or less suffused with red; hindwing with a long tail at vein 4; wings on both sides black, behind the middle of the hindwing sprinkled with grey scales, wings with large rounded white (♂) or white-grey (♀) discal and submarginal spots, also

<sup>1)</sup> See vol. I, p. 8; vol. V, p. 12; vol. IX, p. 11.



three spots of the same colour in the cell of the forewing and one in the cell of the hindwing; the submarginal spots of cellules 1 c—5 of the hindwing are filled in with vivid red (♂) or reddish (♀). The larva is whitish and has on each segment reddish fleshy tubercles; it lives on a Combretacea, *Quisqualis grandidieri* Baill. Pupa of greenish colour and strongly curved in S-shape; the three middle segments of the abdomen have each two short tubercles above. The history of this magnificent species is very singular. Like *antimachus* it was first described and figured by the English collector D. DRURY in his work „Illustrations of Natural History“. DRURY did not know the habitat of *antenor* and even in 1836 BOISDUVAL had seen no specimen of this species, but reported that according to HOPE it was a native of Timbuctoo in the Western Soudan. Not until much later was it known that *antenor* inhabits Madagascar, where it only occurs on the west and south coasts, but not in the primeval forest region. *antenor* is allied to the East Indian *Aristolochia* Papilios and is one of the many proofs that the fauna of South Asia is more closely connected with the fauna of Madagascar than with that of the African continent.

### C. Kite Swallowtails.

This division is represented by numerous species in the Ethiopian Region. The species are on an average smaller and more weakly built than those of the first division. They may be divided into 6 groups, of which the first four have rounded hindwings, without tails. The ♀♀ of most of the species are very rare in collections and some of them even quite unknown; they differ very little from the ♂♂.

#### Ridleyanus Group.

Hindwing rounded, without tail. Frons broadly yellow at each side, only narrowly black in the middle. Palpi unicolorous yellow. Wings above black and red, marked similarly to the species of the genus *Acræa*. Earlier stages unknown.

**P. ridleyanus** White (1 a). Forewing black, semitransparent in places, with a half-band of 5 red spots *ridleyanus*. in cellules 1 a—4 and two deep black transverse spots, margined with yellow at each side, in the cell; hindwing above red with black marginal band and base and a few black spots. — From Lokoja on the Niger to Angola, Equatoria and Bukoba on the Victoria Nyanza.

#### Pylades Group.

Hindwing tailless, angled at the extremities of the veins. Frons with a white or red dot or streak at each side. Palpi white. Wings above white and black, beneath at the base red or red-brown. The underside of the wings has the same white ground-pattern in all the species. On the forewing this consists of 8 submarginal spots placed close to the margin; 9 discal spots (in 1 a—8), of which those of cellules 5, 6 and 8 are almost always small and double, and four transverse spots or bands in the cell. The hindwing has beneath a broad white transverse band, which at the costal margin extends at least to vein 2, covers almost the whole of the cell and is separated from the white inner marginal area 1 b by a dark longitudinal streak in cellule 1 c. In the broad, dark submarginal band the hindwing has 6 submarginal spots, of which those of cellules 1—4 are sometimes divided, and 3—4 subdiscal spots in cellules 2—5; these may also be double and arranged in two rows. The hairs of the inner marginal fold of the hindwing of the ♂ are long and yellowish white. The full-grown larva has not only on the first and the penultimate segment, but also on the second and third two widely separated spines. The long hump on the mesothorax of the pupa is obliquely inclined forwards and extends almost as far as the tip of the head.

**P. endochus** Bdv. (7 c). Hindwing beneath with 4—5 free red subdiscal spots in 1 c—5. The white *endochus*. basal part of the upper surface of the wings is very large, almost reaches the apex of the cell on the forewing and extends beyond the cell on the hindwing; the black parts of the upperside are almost without spots with the exception of a small spot in cellule 7 of the hindwing. — Madagascar.

**P. pylades**. Hindwing beneath without red spots in the marginal band; both wings above with white spots in the marginal band; abdomen with a broad yellow lateral stripe at each side; apex of the cell of the forewing with two white spots, one in the upper and one in the lower angle. — **pylades** F. (7 c). The discal *pylades*. spot in cellule 3 of the forewing completely fills up the base of this cellule and is united with the hindmarginal spot of the cell and the discal spots of cellules 1 a—2 into a large white area. Senegal, as far as the White Nile, southwards only to the most northerly part of the Congo State. — **angolanus** Goeze (7 b). The discal *angolanus*. spot in cellule 3 is entirely absent or is small and quite free, not reaching the base of the cellule; cell of the forewing without white hindmarginal spot or with only a very small one. From the Congo region southwards to Natal and eastwards to British East Africa. ab. **lapydes** Suff. only differs from *angolanus* in that the cell *lapydes*. of the forewing has a hindmarginal spot, which however only reaches vein 3; German East Africa: Kilossa.

**P. morania**. Hindwing beneath without red spots in the marginal band; both wings above with white spots in the marginal band; abdomen without continuous yellow lateral stripe, at most with three yellow lateral spots on segments 2—4, on the other hand with triangular black lateral spots. Apex of the



cell of the forewing either filled by a single white spot or with two spots, which however are only narrowly *morania*. or incompletely separated. — In **morania** *Angas* (7 b, c) the discal spot in cellule 2 of the forewing is large and completely fills up the base of the cellule; the white subdiscal spots of cellules 2—5 of the hindwing above are placed nearer to the inner margin than to the outer margin of the black marginal band; the markings yellowish or greenish white. Ovambo Land to Delagoa Bay. — **taboranus** *Oberth.* (7 b) has the markings of the upper surface snow-white; the discal band in cellule 2 of the forewing is smaller, not reaching the base of the cellule and is quite free; the white subdiscal spots of the hindwing above are almost in the middle of the marginal band. Nyassaland and German East Africa.

### Tynderaeus Group.

Hindwing tailless, with rounded margin, which is angled at the ends of the veins or merely undulate. Wings above black-brown with green spots. Hindwing beneath at the base with one or several separated black dots or spots and distinct black dots or spots in the apex of the cell and in the basal part of cellules 1 c—7. This group connects the preceding one with the following, since *cyrnus* is allied to *morania* and *latreillianus* to *fulleri*. The sexes are similar; the earlier stages still unknown.

**P. cyrnus.** Forewing beneath broadly red at the base of the costal margin; veins of the hindwing beneath broadly edged with red or brown; forewing with 8 single submarginal spots, 8—10 discal spots and 3 spots in the cell; hindwing with a large spot in the cell, 5 discal spots and 5 submarginal spots in cellules *cyrnus*. 1 b—5. — **cyrnus** *Bdv.* (3 c). The discal spot in cellule 1 a of the forewing is wanting and the spots in 1 b—3 *nuseyrus*. are separated from one another. Madagascar. In ab. **nuseyrus** *Suff.* the discal spot in 1 a is present and the spots in cellules 1 b—3 are united; Madagascar.

*tynderaeus.* **P. tynderaeus** *F.* (7 a). Forewing beneath not red at the base, with two submarginal spots in each cellule; the median band of the hindwing consists of a green spot in the cell and in 1 c, as well as a whitish spot in cellule 7; all the spots of the upper surface and also the discal spots of the under surface are vivid green, only becoming yellowish through discoloration (ab. *ochrea* *Capr.*); the palpi and the dots on frons and breast are red; the wings beneath with more or less purple sheen. — West African primeval forest region, from Sierra Leone to the Upper Congo.

**P. latreillianus.** Margin of the hindwing slightly waved; palpi yellow; dots on frons and breast white; *latreillianus*. the spots of the under surface faint and yellowish, with a brassy sheen, never green. — **latreillianus** *Godt.* *theorini*. (3 d) is smaller; forewing above with distinct green submarginal dots. Sierra Leone. — **theorini** *Auriv.* (3 d). Larger; the forewing entirely without submarginal dots. Cameroons to Angola.

### Leonidas Group.

Hindwing tailless, beneath at the base with one or several separated black dots, but without any dots in the middle of the wing. Wings above black or blackish with yellow, white or light blue markings. Larva with two spines on the first and the penultimate segment; segments 2 and 3 only angled at the sides, without spines. Pupa vertical in front, since the hump on the mesothorax extends as far forward as the head.

#### 1. Sub-Group.

Both wings beneath without distinct dark longitudinal streaks on the folds between the veins and without dark longitudinal streaks in the cell of the hindwing. Both wings with submarginal spots. The discal spot of cellule 1 b of the forewing never reaches the base of the cellule.

**P. leonidas.** Hindwing usually with free discal spots in cellules 2—5 and with a broad basal transverse band, which covers the greater part of the cell and the base of cellules 1 c, 2, 6 and 7. Forewing always with discal spots in cellules 1 b, 3, 7 and 8, and usually also with small ones in 2, 4, 5 and 6; the cell *leonidas*. mostly with three spots. — **leonidas** *F.* (= *similis* *Cr.*) (7 d). All the spots light blue (♂) or bluish white (♀); forewing without discal spot in cellule 1 a; the submarginal spots of both wings large; the discal spot of cellule 4 of the forewing is proximally rounded and does not reach the base of the cellule. Sierra Leone, Angola, Delagoa Bay, British East Africa. In ab. (?) **interniplaga** *Auriv.* the forewing has a large discal *interniplaga*. spot in cellule 1 a, otherwise it is similar to the preceding form. German East Africa. ab. (?) **onidale** *Suf.* has the light basal part of the hindwing sprinkled with black scales, the veins in that part are margined with black and the spots in cellules 1 c and 2 are small or entirely wanting; otherwise similar to the *brasidas*. form *leonidas*. German East Africa: Muanza. — **brasidas** *Fldr.* (7 d). Here the spots on the upper surface are small, white or yellowish white; the submarginal spots dot-like. No discal spot in cellule 1 a of the fore- *umanus*. wing. Angola to Natal. — **umanus** *R. & J.* differs from all the preceding in that the light basal transverse *pelopidas*. band of the hindwing only extends as far as the base of vein 2. Abyssinia. — **pelopidas** *Oberth.* The spots of the forewing light bluish, on an average somewhat larger than in *leonidas*, the discal spot in cellule 4 reaches the base of the cellule, the basal transverse band of the hindwing is very broad and almost pure white, but the submarginal spots are small, dot-like, not larger than the discal spots. A little known form as yet, perhaps



a separate species, although it agrees very closely with *leonidas* in the markings. German East Africa and Pemba Island.

## 2. Sub-Group.

Wings beneath with distinct dark longitudinal streaks on the folds between the veins and with dark longitudinal stripes in the cell.

**P. levassori** Oberth. (9 b). The greater part of the wings above is yellowish white, but the following *levassori*. parts are black: the costal margin of the forewing as far as the cell and on the hindwing the apex, which is adorned with two light spots in cellules 7 and 8, and a marginal line, only 1 mm broad between vein 5 and the hinder angle, which is somewhat widened at the apical angle and there encloses two light spots. — Great Comoro.

**P. hachei** Dew. Forewing black to blackish with a yellowish white half-band, which is very broad at the *hachei*. hindmargin, reaches vein 5 and is there connected with a large, similarly coloured spot in the apical half of the cell; this band completely covers the base of cellule 2 and only leaves the innermost part of cellule 1 b free; hindwing above from the base to considerably beyond the apex of the cell pure white with an unspotted black marginal band about 5 mm broad, which is narrowed towards the costal angle. — Congo region.

**P. moebii** Suff. (9 c) is very similar to the preceding species and only differs essentially from it in *moebii*. that the white band of the forewing is somewhat narrower and leaves the base of cellule 2 free and that of the hindwing is only 12 mm broad and reaches neither the base nor the apex of the cell. — Congo region.

**P. auriger** Btlr. (3 b). Wings above black with white median band, about 10 mm broad, interrupted *auriger*. in cellule 5 of the forewing, and without submarginal spots; hindwing beneath at the base deep black with an orange-yellow spot at the base of the costal margin. — Gaboon.

**P. ucalegon**. Abdomen with triangular whitish lateral spots; both wings without submarginal spots; median band formed almost as in *auriger*; hindwing beneath at the base yellow-brown to light red-brown, with three black dots (in cellules 7 and 8 and in the cell), of which the one in the cell is spotted with white. — **ucalegon** Hew. (3 b) has the median band above greenish white, beneath on the hindwing of the same *ucalegon*. colour and sharply defined at both sides; the spot in the cell of the forewing is usually small and elliptical, but sometimes entirely absent (ab. **legonuca** Suff.). Old Calabar; Cameroons; Gaboon. — In **simoni** Auriv. *legonuca*. *simoni*. the median band is almost pure white, beneath on the hindwing sharply defined at both sides; the spot in the cell of the forewing is large, triangular and its apex often reaches the front margin of the cell, forming a transverse band much narrowed anteriorly. In the northern part of the Congo region. — **ucalegonides** *ucalego-* *nides*. *Stgr.* has the median band more or less yellowish, beneath on the hindwing indistinctly defined and not sharply prominent; the discal spots of the forewing are very inconstant, so that sometimes one, sometimes the other is small or absent, the band being interrupted. In the central and southern districts of the Congo region.

**P. phrynon** Druce. Forewing red-brown, a cream-coloured, broken spot near to the apex larger than *phrynon*. in *ucalegon*; a streak in the cell along the hindmargin and a long, angular spot in cellule 3, which almost reaches the margin, cream-coloured; a cream-coloured spot at the middle of the hindmargin in cellule 1 a and a large similar spot in 1 b; hindwing gold-brown with broad cream-coloured median band; hindwing beneath lighter than above, with black veins and dark red-brown basal area, but without light median band. This form (unknown to me) is perhaps only an aberration of *ucalegonides* in which the discal spots 2, 4 and 5 of the forewing are entirely wanting. — Upper Congo.

The following species are distinguished from the preceding in that the broad black marginal band of the hindwing is always ornamented with light spots. The wings have a common light median band, which does not reach the base of the hindwing and is interrupted in cellule 5 of the forewing. Hindwing beneath without black basal dot in cellule 7 and consequently with only two such dots. Hindwing with 3—8 usually double submarginal spots.

**P. fulleri** Smith. The markings light yellow; the median band formed almost exactly as in *ucalegon*; *fulleri*. cell of the forewing with an apical spot and a streak at the hindmargin between veins 3 and 4; hindwing with two submarginal dots each in cellules 2—6 and with three large discal spots about in the middle of cellules 2—4, beneath red at the base. — Cameroons.

**P. aurivilliusi** Seeldr. Markings white, slightly suffused with greenish; discal spots 1 a and 1 b of *aurivilliusi*. the forewing do not cover the base of these cellules; both wings with two small streak-like submarginal spots in each cellule; hindwing above with a single discal spot in each of cellules 2—4; the white basal spot of cellule 2 of the hindwing obliquely cut off distally and sharply defined; the cell of the forewing with 3—4 white longitudinal streaks opposite to cellule 3 and with a white costal marginal spot just before the apex. — Congo region.

**P. agamedes** Westw. (3 c). Markings white; the median band of the forewing continuous to vein 5, *agamedes*. not covering the base of cellules 1 a and 1 b; the large white spot in the cell of the forewing (opposite to



cellule 3) does not reach the front margin of the cell; forewing deep black at the base, much darker than in the discal half; the basal spot in cellule 2 of the hindwing incised distally; hindwing with two submarginal and two discal streaks each in cellules 2 to 4 or 5. Ashanti and Togo. ab. **medesaga** Suff. only differs in that the forewing has a small spot in the apex of the cell and a double submarginal spot in cellule 6; Togo.

*adamastor.* **P. adamastor** Bdv. (3 c) is very similar to the preceding species and only differs in that the transverse spot of the cell of the forewing is larger and reaches the front margin of the cell, the discal spot in cellule 2 on the contrary is smaller and rounded or entirely wanting, so that the median band is here interrupted. — Ashanti and Togo.

*almansor.* **P. almansor** Honr. Markings white; median band of the forewing also broadly interrupted in cellule 2, as the discal spot of this cellule is absent or very small; the transverse spot of the cell of the forewing reaches the front margin of the cell, but is rather broadly separated from the discal spot in cellule 3; hindwing without discal dots and with indistinct or partly absent submarginal dots, the apex of the cell filled in with white; the cell of the forewing with a white apical spot; the discal spot in cellule 1 b of the forewing does not reach so far basad as the spot in 1 a and is therefore shorter. — Ashanti and Angola.

*carchedonius.* **P. carchedonius** Karsch (9 c) only differs from *almansor* in that the discal spots in 1 a and 1 b of the forewing are both obliquely rounded off proximally and the cell of the forewing has no apical spot. — Togo and Congo region.

*uganda.* **P. uganda** Lathy. Nearly allied to both the last-named species; the white markings of the forewing are much reduced, consisting only of three short streaks in the middle of the cell, small discal spots in 1 a, 1 b and 3, two streaks in cellule 6, a broken discal spot in 8 and submarginal dots in 1 b, 2, 3 and 6; the discal spot in 1 a is placed much nearer to the base than that in 1 b; the transverse band of the hindwing is somewhat yellowish, covers the apex of the cell and is incised in cellules 2 and 6, but without discal spots. — Uganda.

*poggianus.* **P. poggianus** Honr. Larger, the length of the forewing about 48 mm., the markings whitish; forewing without submarginal spots; in the cell, opposite to cellule 3, a large transverse spot which reaches the front margin of the cell and is united with three long discal spots in cellules 2—4; the discal spot in cellule 2 is very long, almost reaching the margin, but narrow, so that it only covers the anterior part of the cellule; the discal spots in 1 a and 1 b consequently form a free hindmarginal spot, which almost reaches the margin, but is rather far removed from the base; the discal spots in 6 and 8 arranged almost exactly as in the other species; the transverse band of the hindwing broad, almost reaching the base and the apex of the cell; the broad dark submarginal band in each of cellules 2—5 with two long whitish, somewhat irregular streaks. — Angola.

*philonoë.* **P. philonoë** Ward (7 a) differs from all the preceding forms in that the discal spots of cellules 1 a and 1 b of the forewing cover the base of these cellules; the submarginal spots of cellules 4—8 of the forewing are single, rounded and rather large, those of the hindwing on the contrary represented in each cellule by two streaks; the basal spots of cellules 2, 3 and 6 of the hindwing are sharply defined distally, transversely cut off or rounded; the cell of the forewing before the middle with three white dots in a transverse line, then a large transverse spot divided into three parts by the dark folds and finally at the apex two white dots; the discal spots of cellules 2—4 of the forewing are usually rounded and more or less separated. — German and British East Africa.

### Policenes Group.

Hindwing with a long, narrow tail of uniform width at vein 4. Frons black with white lateral margins. Wings above with green or greenish white markings. Cell of the forewing with 5—6 transverse bands or spots. Both wings with submarginal spots. Hindwing beneath with a so-called ornamental band, formed of red spots. Besides the markings already mentioned the forewing has a spot at the base of cellules 1 a and 1 b, an oblique transverse streak in the basal part of these cellules and 8 discal spots, one each in cellules 1 a—6 and 8; the hindwing has a narrow transverse band at the base, a narrow median band which consists only of three spots (in the cell and in cellules 2 and 7) and usually also 7 discal spots in cellules 1 c—7, of which, however, that in 1 c is red. The larva has four pairs of spines, one pair each on the 1., 2., 3. and penultimate segments. The pupa is very angularly widened at the beginning of the abdomen and has a long hump on the mesothorax.

#### 1. Subgroup.

Hindwing in the apex of the cell with an additional light spot which is sometimes more or less united with the spot of the median band. The discal spot in cellule 3 of the hindwing is elongated and nearly or quite reaches the base of the cellule. Wings beneath spotted with red at the extreme basal margin. Cell of the forewing behind the fifth transverse streak unicolorous, without spots.



**P. evombar** *Bdv.* (8 c). Markings of the upper surface greenish white; the middle cell of the forewing *evombar*. with 5 almost straight transverse bars; the second, which as usual is prolonged posteriorly, confluent at the hindmargin with the discal spot of cellule 1 a; the spot in the apex of the cell of the hindwing above completely or almost completely united with the median band; the discal spots of cellules 2 to 4 of the forewing completely fill up the base of the cellules; the hindwing above without red spots. Madagascar.

**P. antheus**. The cell of the forewing with 5 green transverse bars, of which the last 3 are curved in S-shape; the markings of the upper surface bright green, at least in the ♂; abdomen with long white transverse bars at the sides; the discal spots of cellules 2 to 4 of the forewing are rounded and therefore do not completely fill the base of the cellules; the hindwing above usually with red spots in cellules 1 c and 2. — **antheus** *Cr.* (9 a). The transverse bars in the cell of the forewing all separated; the apical spot in the cell of the hindwing above completely separated from the median band of the cell by the black ground-colour; the middle cell of the hindwing beneath with a deep black and red spot. The larva is brown to brown-green with a yellow belt on the third segment and lives on Artabotrys, an Anonacea. Sierra Leone to Angola. — In ab. **evombaroides**. *Evombaroides*. **baroides** *Eim.* (9 a) the apical spot of the cell of the hindwing above is more or less united with the median band; otherwise not different from *antheus*. West Africa. — In ab. **utuba** *Hamps.* the fourth and fifth transverse bands in the cell of the forewing are united posteriorly, forming a U-shaped spot; otherwise agreeing with *nyassae*. Delagoa and British East Africa. — **nyassae** *Btlr.* has the middle cell of the hindwing beneath without the black and red spot; the transverse bars in the cell of the forewing separated. Natal to British East Africa. — ab. (var. ?) **lurinus** *Btlr.* is somewhat larger than *antheus* and has the green markings of the upperside more extended, especially the transverse bars in the cell of the forewing and the submarginal spots of both wings are nearly twice as large as in the latter. Nyassaland and in the neighbourhood of Victoria Nyanza.

**P. mercutius** *Sm. & Kirby.* Markings of the upper surface yellowish white; second and third transverse bands and again fourth and fifth transverse bands united to form a large, almost quadrate spot; the hindwing on both surfaces with a red spot in 1 c and 2 and beneath also with a red dot in cellule 7; the cell of the hindwing on the other hand without red or black spot. Only one specimen known. Is perhaps only an aberration of the female of *nyassae*. Delagoa Bay.

## 2. Subgroup.

The apical fourth of the cell of the hindwing above unicolorous black without light spot. The cell of the forewing with a light spot or dot at the costal margin close before the apex.

**P. nigrescens** *Eim.* (9 a). The green spots smaller than in the following species; the hindwing, however, above in the base of cellule 3 with a small oblong green spot, which is completely absent in all the following species; the light transverse bars in the cell of the forewing very thin, linear or quite indistinct; the submarginal spots of both wings small and indistinct. Cameroons to the Kuilu River.

**P. policenes** *Cr.* The hindwing above with a small red spot in cellule 1 c behind the middle of the inner margin; the transverse bars in the cell of the forewing almost entirely straight; the discal spots 2 to 7 of the hindwing above all well developed, the one in cellule 6 posteriorly bluntly rounded off or truncate, little or not at all longer than broad; the ornamental band of the hindwing beneath complete, as a red streak or spot is present also in the apex of the middle cell; the red transverse streak in cellule 2 of the hindwing beneath is placed almost exactly at the middle of vein 3; the markings of the upper surface in the ♂ bright green, in the ♀ somewhat paler green. The full-grown larva is above bright green, the six spines on the first three segments black, at the base red. The pupa is usually fastened to the midrib of a leaf and bright green, above with two rows of black dots at each side. The larva lives on Uvaria caffra and on a species of Artabotrys. One of the commonest Swallowtails of Africa, distributed from Sierra Leone to Angola, Uganda and Equatoria and from Natal to British East Africa. — **liponesco** *Suff.* The red spot in cellule 1 c of the hindwing above is entirely absent; the green spots of both wings much smaller than in *policenes*, otherwise not differing. Togo.

**P. sisenna** *Mab.* (8 c, 9 a). The last three transverse bars in the cell of the forewing somewhat curved; the hindwing above without red spot in cellule 1 c; the discal spots 2 to 6 on the upperside of the hindwing rather large and green, the one in cellule 6 posteriorly pointed, long and narrow, almost a mere line; the apex of the cell of the hindwing beneath with a red streak or spot; the red transverse streak in cellule 2 of the hindwing beneath is placed distinctly behind the middle of vein 3; the markings of the upper surface bright green. Portuguese and German East Africa.

**P. polistratus** *Sm.* The last three transverse bars in the cell of the forewing somewhat curved; the hindwing above without red spot in cellule 1 c; the discal spots 2 to 5 of the hindwing above are entirely absent; the apex of the cell of the hindwing beneath without red spot; the discal spot in cellule 6 of the hindwing narrow, streak-like; the large light basal spot in cellule 2 of the hindwing is entirely absent on the under surface or is only indicated; the markings of the upper surface light green. Portuguese to British East Africa. — **richelmanni** *Weym.* only differs in having the discal spots in cellules 4 and 5 of the hindwing present. German East Africa.



*junodi.* **P. junodi** Trim. Very nearly allied to the preceding species and only differing from it in that the markings of the upper surface are greenish white, the basal spot of cellule 2 of the hindwing is large also beneath, the submarginal spots on the upperside of the hindwing and in cellules 1b to 5 of the forewing are very small or absent; of the discal spots of the hindwing those of cellules 2 and 3 are completely absent, those of cellules 4 and 5 are small and the one in cellule 6 is rather large, rounded posteriorly. Delagoa Bay.

*porthaon.* **P. porthaon** Hew. (8 c). The last three transverse bars in the cell of the forewing deeply curved in S-shape; the markings of the upper surface all yellowish white and the hindwing above without red spots; the hindwing with discal spots in cellules 2 to 5; the ornamental band of the hindwing complete, formed of red spots or streaks in cellules 1c to 8, but without red spot in the middle cell. The adult larva is velvety green, with a variegated transverse band on each segment, composed of a white central line and on each side of this a black-brown, a green-yellow and again a black-brown transverse line; it lives on an Anonacea. The pupa is grey-black with a row of black dots on each side of the abdomen; the horn on the mesothorax is shorter than in the pupa of *policenes*. Delagoa Bay to British East Africa. — ab. **adjectus** Thur., from German East Africa, only differs in that the hindwing "has in cellule 3, in the sinus of the median band below the middle cell, a streak of about 3 mm. length in the greenish white ground-colour".

*colonna.* **P. colonna** Ward (8 c). The markings of the upper surface green, only two transverse streaks of the hindwing in cellules 1c and 2 red; the ground-colour darker than in the preceding species, almost pure black; distinguished from all the preceding species by having the discal spot in cellule 1b of the forewing very narrow, streak-like, and forming a direct continuation of the second transverse bar of the middle cell, and further by having the discal spot in cellule 2 of the forewing also narrow and placed almost exactly at the middle of vein 2; the hindwing entirely without green discal spots. The larva is yellowish green with a violet-brown lateral line; the spines on the second and third segments are not simple as normally, but bear small spines; it lives on an Anonacea of the genus *Artabotrys*. The pupa is light bluish green and uneven, so that it is deceptively similar to a leaf partly eaten by larvae; the silken girth of the pupa is very thin and often breaks off, so that the pupa hangs quite free like that of a Nymphalid. On the east coast of Africa, from Delagoa Bay to British East Africa. — ab. **loncona** Suff. only differs in having the narrow green median band of the hindwing posteriorly bounded by the median and hence not forming the usual spot in the base of cellule 2. German East Africa.

#### Kirbyi Group.

The hindwing is tailed as in the *policenes*-group and the *kirbyi*-group also agrees in the other distinguishing marks so nearly with the former that it can scarcely be distinguished from it except by the unicolorous black middle cell of the forewing and the absence of the submarginal spots of the same wing. The markings of the upper surface consist only of a narrow median band, which, however, is continuous from the costal margin of the forewing to the middle of the inner margin of the hindwing and composed of 8 to 9 spots on the forewing (in cellules 1a to 6 or 7 and 8) and 4 spots on the hindwing (in cellules 1c, 6, 7 and the middle cell), and of 4 to 6 submarginal spots on the hindwing. The hindwing above without red spots. The ornamental band of the hindwing beneath is well developed and consists of red, black-bordered bars in cellules 1c, 2, 3, 7 and in the apex of the middle cell. The early stages are unknown.

*illyris.* **P. illyris** Hew. (8 a). The markings of the upper surface yellow; the median band curved slightly basad at the costal margin of the forewing and without spot in cellule 7; the tail of the hindwing only white at the extreme tip; the hindwing with red-yellow marginal lunules. Ashanti to the Congo. — ab. (var. ?) **flavisparsus** Fruhst. has the submarginal spots of the hindwing and the red spots on the under surface larger than in the normal form. Island of Fernando Po.

**P. kirbyi.** The median band of the forewing quite straight to the costal margin and with a spot in cellule 7; the tail of the hindwing white almost to the middle. — In **kirbyi** Hew. (8 a) the markings of the upper surface are whitish; from West Africa (Lagos) and British East Africa. — **ottonis** Auriv., from German East Africa (Usambara) has the markings of the upper surface green.



## Alphabetical List

of the forms of the Ethiopian Papilionidae with reference to the original descriptions.

\* signifies that the form is also figured at the place cited.

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antinori Pap. *Oberth.* An. Mus. Genov. 18, p. 711. \*  
aristophontes Pap. *Oberth.* Bull. E. Fr. 1897, p. 188. \*  
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## 2. Family: Pieridæ, Whites.

The members of this family, like the Papilionids, have the forelegs fully developed in both sexes and differ in this from the Danaids, Satyrids, Nymphalids, Lemoniids and Lycaenids. Only in a few genera of the Lycaenids the forelegs are almost as well developed.

The head is mostly of medium size with convex, naked eyes. Palpi usually well developed, more or less compressed, rarely small and not projecting beyond the head. Tongue well developed. Antennæ medium or long, usually with sharply defined club, rarely (in *Pseudopontia*) entirely without club. Abdomen in all the Ethiopian species shorter than the hindwing. Foretibia without the spur characteristic of the Papilionids. Claws bipartite. Wings with closed middle cell. Forewing with only one submedian, but this often bifurcate at the base. Hindwing always with two inner-marginal veins.

The eggs are upright, very elongate, conical or almost bottle-shaped, sometimes also narrowed beneath and hence spindle-shaped. They have fine longitudinal ribs and are usually of a light, whitish or yellow colour.

The larvae are cylindrical, fine-haired with the normal number of legs. They are often gregarious and are usually of green colour with or without light longitudinal lines.

The pupæ are fastened at the anus and by a girth round the middle. The head has a single point, often very long; the dorsum is more or less sharply keeled, the wing-cases often project very strongly and the sides have sometimes pointed protuberances.

The early stages of most of the African species are unfortunately still entirely unknown and but little is known as to the habits.

The Pierids have almost always a light, white, yellow or orange-yellow ground-colour and black markings. These latter consist of a spot at the apex of the middle cell, black marginal spots at the extremities of the veins and black submarginal spots, which are usually placed between the veins, but sometimes also on them. The submarginal and the marginal spots are often merged together into a dark marginal band. The base of the wings is often, especially beneath, more brightly coloured, yellow, orange-yellow or red. Other markings only occur very rarely.

The Pierids occur in large numbers in the whole of the Ethiopian Region, but are much commoner in the open steppe-like districts of South, East and North Africa than in the forest-covered districts, and are almost the only representatives of the butterflies in the purely desert regions. The East African subregion may rightly be regarded as the country of the Pierids. The latter form there about 19% of the butterfly fauna, whilst in South Africa they constitute 13% and in West Africa only 8%.

Many Pierids and very specially the species of the genus *Teracolus* are very susceptible to climatic conditions and consequently have in the dry season a different coloration from that of the rainy season. These seasonal forms, however, are sometimes connected by numerous intermediate forms. But when a species is distributed over districts where the seasons vary little or not at all, there occurs there usually only the one seasonal form as a constant form; e. g. in Aden, where only dry-season forms, and in the Cameroons, where only rainy-season forms occur.

In the Ethiopian Region there are twelve Pierid genera, of which four, *Pseudopontia*, *Herpaenia*, *Mylothris* and *Calopieris*, are peculiar to this fauna. *Pseudopontia* and *Calopieris* have only been found on the continent, but the other two occur also on Madagascar. *Mylothris* is a very extensive genus, being represented everywhere in Africa by common species, and may hence be regarded as the characteristic Pierid genus of the Ethiopian Region. In Arabia, on Socotra and the Maskarenes it is entirely absent.

Concerning the division of the Pierids into subfamilies authors are not yet agreed. The Ethiopian genera appear to be best divided into the four following subfamilies.

### Summary of the Subfamilies.

- A. The antennæ entirely without club, towards the tip slightly moniliform. Veins 5 and 6 of the hindwing stalked. Vein 5 of the forewing from the stalk of 6 and 7. Veins 7 and 8 of the hindwing touch one another at a point, so as to form a closed basal cell. *Pseudopontinae*.
- B. The antennæ with club, never moniliform. Veins 5 and 6 of the hindwing separate or from the same point. Vein 5 of the forewing never from the stalk of 6 and 7. Veins 7 and 8 of the hindwing widely separated.



\* The hindwing with long and distinct precostal vein. The first two joints of the palpus clothed below with bristles and hairs.

1. Vein 6 of the forewing arises from vein 7 far beyond the apex of the cell.

Pierinae.

2. Vein 6 of the forewing arises almost always entirely free from the apex of the cell or is only very shortly stalked.

Teracolinae.

\*\* The precostal vein of the hindwing is entirely absent or is only very short and curved towards the base. The palpi beneath smooth-sealed or rarely clothed with bristles and hairs. Vein 6 of the forewing always from 7.

Coliadinae.

### 1. Subfamily: Pseudopontiinae.

To this subfamily belongs only a single genus. The characters of the subfamily are consequently identical with those of the genus.

### 1. Genus: **Pseudopontia** Plötz.

Very delicately built butterflies with broadly rounded wings. Head rounded; the eyes seen from above somewhat converging anteriorly. Antenna short, scarcely reaching the apex of the cell, filiform, without club, but distally with the segments slightly moniliform. Palpi very short and fine. Proboscis well developed. The middle cell of both wings small and short, scarcely reaching to more than one-third. Vein 5 of the forewing from the stem of 6 and 7, 8 and 9 wanting, 11 at first directed almost straight towards vein 12 and then curved. Veins 5 and 6 of the hindwing stalked, vein 7 at first quite straight and touching vein 8 at a point, then curved round in almost a right angle towards the distal margin; vein 8 from the base onward bending away from the cell and with distinct precostal vein, curved distad. — The most peculiar of all the known genera of butterflies. The differences in the build of the body are so great that some authors have placed the genus among the Heterocera. — The early stages, which are at present unknown, will probably throw light upon the affinities of the genus.

*paradoxa*.

**P. paradoxa** Fldr. (10 a). Unicolorous white without markings; the wings thinly sealed, semitransparent and in certain lights strongly iridescent. On the west coast of Africa, distributed from Sierra Leone to Angola, and especially in some parts of the Cameroons not rare; probably occurs in the whole of the tropical forest region. The sexes are quite similar; the females, however, are somewhat larger than the males.

*cepheus*.

**P. cepheus** Ehrm. This species, which is unknown to me, possibly does not belong to this genus. It is described by EHRMANN as follows: „Both wings above pure white; forewing at the apex with a sharply defined, quadrate black spot and before the apex with a moderately large, triangular black spot. The ground-colour of the forewing beneath the same as above; the black spots of the upper surface showing through slightly; the basal part is slightly greenish and marmorated with fine black bars. Hindwing beneath white with thin black bars“. Captured in Liberia near Grand Sess.

### 2. Subfamily: Pierinae.

The genera which belong here may be easily recognized by the pointed, bristly or rough-scaled palpi, the long stalk of veins 6 and 7 of the forewing and the well developed precostal vein of the hindwing.

The six Ethiopian genera may be readily distinguished by the following characters:

- A. The forewing at most with 11 veins. The precostal vein of the hindwing straight or curved distad.
  - a) Vein 5 of the forewing arises from the upper angle of the middle cell, the middle discocellular being completely absent or only very short.
    1. Club of the antenna elongated, spindle-shaped, pointed. Forewing with only 10 veins. 2. Leptosia.
    2. Club of the antenna obtuse and short. Forewing with 11 veins. 3. Herpaenia.
  - b) Vein 5 is separated from the upper angle of the cell by a long middle discocellular, which is obliquely directed proximad.
    1. The forewing with only 10 veins, vein 7 being quite simple and not forked; the first subcostal vein (vein 9) quite straight and completely parallel with vein 8. 4. Mylothris.
    2. The forewing usually with 11, rarely with only 10 veins (vein 8 being extremely small or absent; but in this case the first subcostal vein is undulate and not parallel with the second vein).
      - a. The middle discocellular of the forewing is distinctly curved and consequently forms a right angle or even an obtuse angle with the stalk of veins 6—8. 5. Appias.
      - b. The middle discocellular of the forewing is quite straight or only very slightly curved and hence always forms an acute angle with the stalk of veins 6—8. 6. Pieris.
- B. The forewing with 12 veins. The precostal of the hindwing proximally curved. 7. Phyllocharis.



2. Genus: **Leptosia** Hbn.

Medium-sized or small, delicately built butterflies. Wings broadly rounded, with white ground-colour. The earlier stages of the Ethiopian species are unknown. The genus also occurs in South Asia and is there distributed as far as the Philippines and Formosa. Fly in woods or at their edges and prefer shady places to sunshine. Sexes similar.

**L. medusa.** Wings white, the forewing above with black apical bands, which usually extend from vein 4 to vein 10. Beneath the apex and base of the forewing and the whole hindwing are more or less densely sprinkled with fine greenish short bars. Both wings beneath with minute black dots at the extremities of the inter-neural folds. Expanse 48—60 mm. — **medusa** Cr. (10 a). Forewing on both surfaces with a large black spot at the middle of cellule 3; hindwing above unicolorous or with black spots at the extremities of the veins. Distributed from Sierra Leone to the Congo district and Uganda. — ab. **immaculata** Auriv. (10 a). Forewing without submarginal spot in cellule 3; hindwing always without dark marginal spots. Together with the type form. — ab. **marginea** Mab. has the hindwing above with broad black marginal bands, otherwise marked like the type form.

**L. alcesta.** Similar to the preceding species, but smaller, only 29—43 mm; hindwing above always unicolorous white; the dark short bars on the underside of the forewing are scarcely greenish and less numerous; on the hindwing they usually form only 1—2 fine transverse lines. Distributed from Sierra Leone to Natal, British East Africa and Uganda; occurs also on Madagascar. — The first known form, **alcesta** Cr. (10 a), has on the forewing a black apical band placed between veins 5 and 8, and a black submarginal spot, which is usually divided by vein 4. — In **narica** F. (10 b) the marginal band of the forewing is entirely absent, but the submarginal spot is well developed. — **nuptilla** Auriv. (10 b). The marginal band of the forewing present, though somewhat narrower than in **alcesta**, but the submarginal spot entirely absent. Hitherto only known from the Ruwenzori Mts. — **nupta** Btlr. (10 b). The forewing also unicolorous white without dark markings.

3. Genus: **Herpaenia** Btlr.

This genus, which is peculiar to the Ethiopian fauna, differs from the other genera of Pierinae not only in the characters given in the summary, but also in its special pattern. Both in this and in its habits it approaches the species of the genus *Teracolus*.

The butterflies fly in the sunshine in open places and shun the shade of the woods; they have a slow flight and commonly rest on flowers. The earlier stages are unknown.

**H. eriphia.** Wings above black with yellow (♀), whitish yellow (♂) or white markings; forewing with the following light markings: a longitudinal streak at the costal margin from the base to beyond the middle and behind the cell widened into a transverse band composed of three spots in cellules 8, 5 and 4; an obliquely placed distal band, almost parallel with the costal margin, which begins at the hindmargin before the middle and is composed of three spots (in cellules 1 a, 1 b and 2); four to five submarginal spots (in 1 b, 3, 5, 6 and sometimes 8), of which the one in cellule 3 is always the largest and that in cellule 5 the smallest; the spot in 1 b is placed close to the distal margin and is usually united with it. The hindwing has above two parallel light transverse bands, one before and one behind the middle, and three to six light marginal spots, of which the one in cellule 6 is always the largest. The under surface is similarly marked, but has always a broad light longitudinal streak in the middle cell of the forewing and dark brown instead of black ground-colour. The species occurs from Senegal to Nubia, in East Africa, in South Africa as far as Angola, and on Madagascar, but is wanting in the West African region. Four local races, each of which has two seasonal forms, have been described. — **eriphia** Godt. (10 c). Forewing above without light streak in the middle cell and with continuous discal band; the light markings more or less yellowish; hindwing beneath not streaked, but with distinct marginal spots. Senegal, South Africa and parts of East Africa. f. **nyassae** Lanz (10 b) is the dry-season form of **eriphia**; the light markings of the upper surface more yellowish; marginal spots on the upperside of the hindwing larger; hindwing beneath more or less densely covered with small brown or reddish streaks, sometimes so densely that the transverse bands become indistinct and the marginal spots are entirely suppressed. Especially in dry districts of South Africa. — **iterata** Btlr. The black markings of the upper surface somewhat more extended and the discal spot in cellule 2 rounded and separated from the band; otherwise agreeing almost entirely with **eriphia**. German and British East Africa and in Somaliland. f. **melanarge** Btlr. (22 g) is the dry-season form of **iterata**; the dark markings on the underside of the hindwing bright reddish-brown. In the same districts as **iterata**. — **lacteipennis** Btlr. (10 b, c) differs in having the light, yellowish markings more extended, in its smaller size and especially in a light longitudinal stripe in the middle cell of the forewing above. Abyssinia and Nubia. f. **straminea** Auriv. (22 g) is the dry-season form of **lacteipennis** and is distinguished by the reddish-suffused under surface of the hindwing. Nubia. —



*mabillei*. **mabillei** Auriv. (22 g) has the light markings on the upperside snow-white and much extended and the black median band of the hindwing beneath proximally abbreviated, not reaching the inner margin. Madagascar.

*callianira*. f. **callianira** Mab. is the dry-season form of *mabillei* and only differs from it in having the under surface of the hindwing and the apex of the forewing suffused with reddish. Madagascar.

#### 4. Genus: **Mylothris** Hbu.<sup>m</sup>

This extensive genus is peculiar to the Ethiopian Region and consists of medium-sized butterflies with white or yellow, rarely dark grey, ground-colour. Their wing-pattern consists only of black spots at the extremities of the veins, which are sometimes all rounded and entirely free, sometimes more or less united into a marginal band; on the hindwing there are rarely more than six marginal spots; the base of the forewing and sometimes also of the hindwing, is often light yellow, red-yellow or fiery red, especially on the under surface; discal spots and dark spots at the end of the cell are always wanting; the apex of the forewing is usually rounded, and more obtuse in the ♀ than in the ♂. Larva of normal Pierid-shape, but with somewhat longer hairs than in the European species of *Pieris*. The pupa with a row of processes on the dorsum and a hook-shaped process on each side at the base of the abdomen. The genus occurs almost everywhere in the Ethiopian Region and is only wanting in Arabia, on the Maskarenes, the island of Socotra and some of the small islands. Although the species are often very nearly allied, it has so far not been proved that any are associated as seasonal forms or as local races. The species may be divided into three groups according to the markings.

##### **Humbloti - Group.**

Both wings entirely without black spots at the extremities of the veins.

*humbloti*. **M. humbloti** Oberth. (10 c). Wings on both surface unicolorous black-grey with somewhat lighter veins. Only met with on the island of Great Comoro.

##### **Chloris - Group.**

The wings always with black marginal spots, which, at least on the underside of the hindwing, are united into a black marginal band. Forewing on both surfaces with black apical band and above with narrow dark costal-marginal stripe as far as the base. The ♀♀ are distinguished by a broader black marginal band on the hindwing.

**M. chloris**. Both surfaces of the forewing with white ground-colour, beneath with red-yellow basal spot; hindwing beneath with ochre-yellow ground-colour; apical spot of the forewing on both surfaces continuous at least to vein 4. — **chloris** F. (10 d). Hindwing in both sexes with white, or in the ♂ sometimes with yellowish ground-colour, its marginal band in the ♂ above 4—5, but beneath 9—10 mm broad, in the ♀ 15—17 mm broad, covering the apical part of the cell. Distributed from Sierra Leone to the Congo and eastwards to Equatoria. — **clarissa** Bth. The black marginal band of the hindwing much narrower, in the ♂ only continuous from the anal angle to the middle of cellule 3, in the ♀ not reaching the apex of the cell; the ground-colour of the hindwing above in the ♀ light ochre-yellowish. Njamnara, Equatoria and Uganda.

*intermedia*. **M. intermedia** Auriv. (12 c). Agrees with *chloris* in the ochre-yellow under surface of the hindwing, but differs from it in the narrow apical band of the forewing, which above is indistinctly defined proximally and beneath only continues to vein 5; the basal part of the forewing to the apex of the cell and the hindwing to the marginal band are covered with black-grey scales above; the ♂ is unknown; the marginal band of the hindwing in the ♀ is only 2—4 mm broad and continuous. Cameroons.

*rembina*. **M. rembina** Plötz (12 a) differs from the two preceding species in the sulphur-yellow ground-colour of the hindwing beneath. The ♂♂ vary but little, have above a pure white ground-colour, an apical band on the forewing only continuous to vein 4 and a narrow marginal band on the hindwing, which is constricted between the veins or even broken up into spots; beneath this marginal band is always continuous and 4—7 mm. broad; the forewing beneath without red-yellow basal spot, at most somewhat sulphur-yellow at the base of the costal margin. The ♀♀ are very variable, rarely similar to the ♂, but usually with much broader marginal band on the hindwing, and the marginal band on the forewing continuous almost to the hinder angle, sometimes with the hindwing above black almost to the base, ab. **infuscata** Bartel, or even suffused with black-grey on both wings, ab. **fusca** Bartel. Cameroons and Gaboon.

*analís*. **M. analis** Auriv. (12 a). ♂: wings above with white ground-colour, hindwing suffused with yellowish at the inner margin and especially at the anal angle, marginal band of the forewing continuous to vein 3; forewing beneath red almost to the apex of the cell, then yellowish, and only white in cellules 1 a, 1 b, 2 and 3, marginal band narrower than above and posteriorly broken up into spots; hindwing beneath ochre-yellow with the marginal band 3—4 mm broad. The ♀ differs only in having both wings reddish orange-yellow with somewhat broader black marginal bands. French Congo.



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## Agathina Group.

The marginal spots of the hindwing entirely free and rounded, at least on the under surface, rarely very small or absent. The forewing below only with isolated or nearly isolated marginal spots. The numerous species of this group are very nearly allied and form an almost continuous series of forms.

**M. nubila** Möschl. (11b). Wings above and beneath with white (♂) or grey (♀) ground-colour: forewing in the ♂ above dusted with blue-grey at the base and along the costal margin; the dark apical band 4 mm. in breadth and only continuous to vein 5; in the ♀ there are only free marginal spots on both sides. Cameroons and Gaboon. *nubila.*

**M. sjoestedti** Auriv. (11a) has like the preceding species a large blue-grey basal spot on the forewing above and white ground-colour, but differs in having the black apical band on the upperside of the forewing 9—10 mm. in breadth and continuous to vein 2 or 3 and the basal part of the forewing beneath yellow; the ♀ is unknown. Cameroons. *sjoestedti.*

*do f. e 7.* **M. spica** Möschl. (10d) ♂. Both wings with white ground-colour and beneath with isolated, rounded marginal spots; forewing above without basal spot but with a black apical band of about 6 mm. in breadth, which is continuous to vein 3, beneath with yellow basal spot, which does not reach the middle of the cell. The ♀ differs in having the forewing ochre-yellow above and only whitish at the hindmargin, with elongate, streak-like marginal spots, which are usually entirely free proximally and only rarely connected by a dark curved line as in the figure. Ashantee to the Congo and eastwards to Victoria Nyanza. In ♀-ab. **caspi** Suff. the spots between the black marginal spots of the forewing are grey instead of yellow as in the type-form. Togo and Cameroons. — **schumanni** Suff. only differs in that the marginal spots on the hindwing above in the ♂ are small and punctiform and that the ♀ has on the upperside of the forewing a black marginal band strewn with yellow scales, which is continuous to vein 2. Island of Konakry off the coast of Sierra Leone. *spica.* *caspi.* *schumanni.*

**M. poppea** differs from *spica* in the ♂ in having an orange-yellow basal spot on the forewing above and in the ♀ in the white ground-colour of both wings. — In **poppea** Cr. (10e) the black marginal band of the forewing above in the ♂ is only continuous to vein 2 and the ground-colour between the elongated marginal spots on the upperside of the forewing in the ♀ is white or whitish. Sierra Leone, Togo. — **hilara** Karsch (10e) has the marginal band of the forewing above in the ♂ continuous at most to vein 3 and grey ground-colour between the black marginal spots on the forewing above in the ♀. Cameroons to the Congo and Uganda. ♀-ab. **continua** Auriv. Ground-colour of both wings white; the forewing above in place of the long marginal spots with a broad black marginal band continuous to vein 2 and proximally emarginate. Ruwenzori. ♀-ab. **dubia** Auriv. only differs from *continua* in having the ground-colour of both wings yellowish white above and yellowish beneath and the basal spot on the forewing above more distinct; French Congo. *poppea.* *hilara.* *continua.* *dubia.*

**M. asphodelus** Btlr. (10e) only differs from *spica* in that the forewing of the ♂ above has a sulphur-yellow basal spot and the dark marginal streaks on the upperside of the forewing in the ♀ (*beethoveni* Suff.) are broader and shorter. Old Calabar to Angola. *asphodelus.*

**M. primulina** Btlr. differs from *asphodelus* in that the yellow basal area of the forewing is extended to the apex of the cell, covers the basal third of cellules 1a and 1b and at the costal margin almost reaches the apical band; the yellow colour is darker at the base, distally sulphur-yellow; beneath the forewing has yellow longitudinal streaks before the apex in cellules 3—7. Lagos. *primulina.*

**M. dimidiata** Auriv. (12b) is nearly allied to the preceding, but easy to distinguish in that the sulphur-yellow colour on the upper surface of the forewing does not extend behind the cell into cellule 1b and is not darker at the base, but on the other hand it completely covers cellules 3 and 4 and even a part of cellule 2, and that cellules 4—7 on the underside of the forewing are not traversed by yellow longitudinal streaks; on the under surface of the forewing the yellow colour has the same extent as above, but is gold-yellow at the base. Sierra Leone. *dimidiata.*

**M. basalis** Auriv., like the preceding species, has the broad black subapical band on the upperside of the forewing continuous at least to the middle of cellule 2; the whole cell and the basal part of cellules 1a, 1b, 2 and 3 are light sulphur-yellow; the costal margin, the basal part of cellules 4—8 and the distal part of cellules 1a—3 on the contrary are pure white; the sulphur-yellow colour has the same extent beneath and is scarcely darkened at the base: hindwing white on both surfaces, at the base sulphur-yellow and with rounded, free, black marginal spots. Congo region. *basalis.*

**M. sulphurea** Auriv. (10f). Forewing above bright sulphur-yellow, at the base gold-yellow with broad black subapical band, continuous to vein 3 or 2; hindwing white on both sides, light sulphur-yellow at the base, with the usual black marginal spots; forewing beneath orange-yellow from the base to beyond the apex of the cell, otherwise sulphur-yellow and with free black marginal spots. Cameroons. *sulphurea.*



- ochracea*. **M. ochracea** Auriv. (10f). In the ♂ the wings are above and beneath ochre-yellow or dark yolk-colour; the forewing above with broad black marginal band continuous to vein 3 and beneath with black marginal spots, of which those at the extremities of veins 6—8 are confluent; the hindwing with very large marginal spots, touching one another. In the ♀ the wings are ochre-yellow; the forewing has very broad black streaks at the extremities of the veins and the hindwing above a broad black marginal band. Cameroons.
- flaviana*. **M. flaviana** Smith only differs from *ochracea* in having the ground-colour of both wings lemon-yellow and the marginal spots of the hindwing much smaller; as in *ochracea* the ground-colour of the under surface is not darkened at the base. Cameroons.
- The following 11 species differ from the preceding in that at least in the ♂ the marginal spots on the upperside of the forewing are either all free or at least those at the extremities of veins 2—4. Hence the apical band, when present, is only very short and narrow. In the ♀♀ the marginal spots are not at all or but little prolonged proximad.
- crocea*. **M. crocea** Btlr. (22a). Both wings above light saffron-yellow with small, free, rounded marginal spots; beneath the ground-colour is lighter, the hindwing and the apex of the forewing whitish. Ruwenzori.
- citrina*. **M. citrina** Auriv. (12d). Marginal spots 6—8 or 5—8 on the forewing united into an apical spot; forewing above with the ground-colour lemon-yellow at the base and gold-yellow (♂) or ochre-yellow (♀) at the costal margin; hindwing above white with sulphur-yellow (♂) or ochre-yellow (♀) basal half, beneath almost white; forewing beneath gold-yellow, basally gradually lighter and at the distal margin almost white. German East Africa.
- erlangeri*. **M. erlangeri** Pag. (12c). ♂: both wings light sulphur-yellow, the forewing with an orange-yellow basal spot on both sides; of the triangular marginal spots of the forewing above only those on veins 7 and 8 are united into a narrow apical spot, which is continued at the costal margin to the base. ♀: both wings dirty brown-yellow, the hindwing lighter; marginal spots 5—8 on the upperside of the forewing united into an apical band; base of the costal margin of the forewing above blackish; all the marginal spots larger than in the ♂. Abyssinia.
- agathina*. **M. agathina** Cr. (10f, 14d ♂; 11a ♀). In the ♂ both wings are pure white above with the apical band on the upperside of the forewing continuous to vein 6 or 5; the red-yellow basal spot on the under-side of the forewing shows through somewhat above; beneath the forewing is white and the hindwing more or less yellow; the apex of the forewing is also sometimes yellowish beneath; the marginal spots on the under surface usually small, but sometimes large and more or less joined together. The ♀ has the wings above also more or less completely suffused with reddish yellow. Occurs from the estuary of the Congo in the whole of South and East Africa to Abyssinia and is the commonest species of *Mylothris*. — Larva with alternate black and reddish transverse bands and sprinkled with yellow spots, with a whitish yellow longitudinal line at each side; head black; lives on a species of *Loranthus* and wanders about like the processionary larva. Pupa whitish with black markings, fastened to leaves in the usual manner of the Pierid-pupae.
- similis*. **M. similis** Lathy (22a) is intermediate between *agathina* and *rueppelli*; forewing above only with a small orange-yellow basal spot; hindwing above at the base slightly yellowish; wings with white ground-colour on both surfaces; forewing beneath with large orange-red basal spot, which extends at least to vein 3; marginal spots and apical band as in *agathina*. British Central Africa.
- rueppelli*. **M. rueppelli** Koch (10f) is somewhat smaller than *agathina* and differs in both sexes in having a large, bright yellow-red basal spot on the forewing; this spot extends far beyond the middle of the cell and also covers the basal part of cellules 1a and 1b; also the hindwing is above more or less sulphur-yellow (♂) or orange-red (♀) at the base. From Cape Colony to Abyssinia. ♀-ab. **kikuyuensis** Bart. differs in the vermilion colour of the basal spot of the forewing and the base of the hindwing. British East Africa.
- tirikensis*. **M. tirikensis** Neave has an expanse of only 43 mm. and differs from *rueppelli* in having the yellow-red basal spot of the forewing above and the sulphur-yellow base of the hindwing densely sprinkled with black scales; the apical band of the forewing is broader and continuous to vein 4. Only the ♀ is known. Uganda.
- kiwuensis*. **M. kiwuensis** Grünb. ♀: both wings above light ochre-yellowish; apical band on the upperside of the forewing as in *tirikensis*; both wings, especially the hindwing, beneath lighter than above; forewing at the base bright orange-yellow nearly to the end of the cell and in the distal half with indistinct light ochre-yellow longitudinal stripes between the veins; hindwing with similar longitudinal stripes in the distal part. At the Kiwu Lake in Central Africa.
- yulei*. **M. yulei** Btlr. (22a) is somewhat smaller than *rueppelli* and is distinguished by having the forewing gold-yellow at the base above and beneath; the basal spot on the upperside of the forewing is much smaller than in *rueppelli*; marginal spot 4 on the forewing above united with the apical band; marginal spots of the hindwing small, punctiform; hindwing beneath more or less yellowish. In the ♀ both wings or only the forewing are above light ochre-yellowish. Nyassaland and German East Africa. — **ertli** Suff. only differs in the



apical band on the upperside of the forewing, which is somewhat broader and continuous to vein 4. Island of Kome in Lake Victoria Nyanza.

**M. phileris** *Bdv.* (11b). Wings on both sides pure white with a yellow spot on the forewing, which is small above and medium-sized beneath: the marginal spots are all free and rounded except those on veins 5—7 or 6 and 7 of the forewing above; those on veins 2—4 of the hindwing are larger than the others. Madagascar. ab. **thinaga** *Suff.* is distinguished by having the hindwing tinged with yellowish along the distal margin, especially intensive before the anal angle, and beneath not white but light yellow. Madagascar. phileris.  
thinaga.

**M. smithi** *Mab.* (12b) is the largest species and is distinguished by 1—2 black spots at the costal margin of the forewing on veins 9 and 10; all the marginal spots are free and rounded; both wings are white and the forewing has a large gold-yellow (♂) or ochre-yellow (♀) hindmarginal spot, which covers cellules 1a, 1b, the base of cellule 2 and the posterior half of the cell longitudinally. Madagascar. smithi.

The following four species differ from the preceding in that the orange-yellow or red basal patch of the forewing is not obliquely cut off distally and is continued more or less far along the costal margin.

**M. bernice** *Hew.* (12c) has the wings white in the ♂, black grey in the ♀: the black apical band of the forewing is broad in the ♂ and continuous to vein 3 or 4, in the ♀ it gradually shades off into the ground-colour; hindwing with very large marginal spots, beneath light yellowish. Congo region. bernice.

**M. rubricosta** *Mab.* (11c) is very similar to the preceding species, but smaller and with small, punctiform marginal spots, which are all free: costal margin of the forewing on both sides narrowly black to the apex; ground-colour of both wings in the ♂ white, in the ♀ dirty grey, above behind the middle of the hindwing more or less whitish. East Africa from Mossambique to Uganda and in the interior parts of the Congo region. rubricosta.

**M. sulphureotincta** *Strand.* "Nearly allied to *rubricosta*, but both wings above and beneath uniformly scaled with sulphur-yellowish or light ochre-yellowish; the black marginal dots larger, those of the forewing with diffuse proximal prolongations, especially the anterior ones; the black costal-marginal band a little broader." Ruanda. sulphureo-  
tincta.

**M. wintoniana** *E. Sharpe* is larger and more powerfully built than *rubricosta*; the ground-colour of the wings is white, but the hindwing is above slightly, beneath strongly tinged with yellow: marginal spots 5—9 on the upperside of the forewing are united into a black apical band at least 5 mm. in breadth: the marginal spots of the hindwing above and beneath very large, rounded, partly contiguous: the red basal spot of the forewing above scarcely indicated, but beneath long and narrow, almost reaching the apex of the cell. Kavirondo and Uganda. wintoniana.

**M. ngaziya** *Oberth.* (11a, b) differs from all the preceding in having both wings above dusted with black at the base for a breadth of at least 5 mm.; both wings above with white, slightly greenish ground-colour or the hindwing in the ♀ tinged with yellowish; costal margin of the forewing rather broadly black: the marginal band on the upperside of the forewing is continuous in the ♂ to vein 4, in the ♀ to vein 2: the marginal spots of the hindwing medium-sized (♂) or very large (♀): marginal spots on the under surface all free; forewing beneath with large orange-yellow basal spot; hindwing beneath yellowish. Comoro Islands. ngaziya

The following forms are distinguished from the preceding ones by the ground-colour of the forewing being white and that of the hindwing sulphur- or rarely ochre-yellow. The forewing beneath more or less yellow at the apex.

**M. trimenia** *Btlr.* (11c, d). The apical band of the forewing above is only continuous to vein 5 and only 2—3 mm. broad at the apex; all the other marginal spots small and free: costal margin of the forewing above narrowly black, not widened at the base; apex of the forewing beneath yellowish. South Africa to Natal. trimenia.

**M. sagala**. The black apical band of the forewing above is at least 5 mm. in breadth and at the distal margin continuous to the hinder angle or represented there by large oval or triangular marginal spots, at the costal margin it is continued as a broad longitudinal band to the base, is more or less widened at the base and covers also the base of the hindwing. Many nearly allied forms of this species have been described. The descriptions are often only made from single specimens and hence it is not possible to decide whether we are dealing with genuine local races or only with individual aberrations. The forms appear to me to intergrade completely without any sharp dividing line; in any case it is not possible from the descriptions and figures to deduce sharp distinctions. Anyone who was able to investigate the forms closely in nature would certainly make interesting discoveries. The species seems to be peculiar to the mountainous districts of Africa. — **sagala** *Smith.* "Anterior-wings white, irregularly irrorated with brown-black, especially on the costa, in the cell and towards the base, where the irroration is so close that the wings are nearly brown-black. Posterior-wings yellow; the base and an irregularly defined space near the apex between the costal nervure and the first subcostal nervule, thickly irrorated with brown-black; minute black spots on the margin at the end of the nervules. Underside: Anterior-wings white; costa grey, apex faintly tinged with yellow. Posterior-wings yellow with small black spots on the margin at the end of the nervules." Interior sagala.



- crawshayi*. of German East Africa. — **crawshayi** Btlr. (11 d). The black marginal band of the forewing above 5—7 mm. in breadth at the apex, either continuous to the hinder angle or posteriorly broken up into large triangular spots at the extremities of veins 1—3; the cell only black in the basal quarter; forewing without black hind-marginal stripe; marginal spots of the hindwing all free. Nyassaland and German East Africa. — **dulcis** Thurnau (12 b) has a narrower, posteriorly indistinct costal stripe on the upperside of the forewing, an apical spot only extending to the middle of cellule 5 and large, long, triangular marginal spots on veins 1—5; the marginal spots of the hindwing are all of equal size. German East Africa near Langenburg. ♀-ab. **decora** Thurnau (12 b) only differs from *dulcis* in having the hindwing ochre-yellow, not sulphur-yellow. German East Africa near Langenburg. — **aequimargo** Thurnau (12 b). This form is also very similar to *dulcis* and only differs in that the costal-marginal stripe on the upperside of the forewing is broader and more sharply defined, the marginal spots on the forewing above are shorter and marginal spot 7 on the hindwing above is much larger than the others. German East Africa near Poroto-Rungwe. — **swaynei** Btlr. agrees with *crawshayi* in having the greater part of the cell on the forewing above white, but has a narrow hindmarginal stripe on the forewing above and free marginal spots at veins 2—4 of the forewing; the marginal spots of the hindwing all equal in size. Somaliland. — **narcissus** Btlr. differs from *crawshayi* in having the cell of the forewing dusted with black at least in its basal half; in the ♀ the marginal band of the forewing above is broad, continuous to the anal angle, proximally with long teeth on veins 2—4 and usually connected by a hindmarginal stripe with the basal spot. On the Kilimandjaro and in British East Africa. — **dentatus** Btlr. (11 c) closely approaches *narcissus*; but the black markings on the upper surface of the forewing are somewhat more extended and marginal spots 6 and 7 on the hindwing above are very large and joined together. Nyassaland. — **knutsoni** Auriv. (11 d). The white ground-colour of the forewing above is completely surrounded by the black colour and distally but little dentate, but covers at least half of the cell; marginal spots 6 and 7 of the hindwing above larger than the rest and usually confluent; ground-colour of the hindwing in the ♂ sulphur-yellow, in the ♀ ochre-yellow. Cameroon Mountains. — **jacksoni** E. Sharpe only differs from the preceding form in that the white ground-colour of the forewing above covers at most the apex of the cell and is distally more broadly rounded and more deeply dentate. British East Africa: Kavirondo and Kikuyu. — **neumanni** E. Sharpe is the darkest of all the forms of *sagala*, the white ground-colour of the upperside of the forewing being reduced to a small triangular spot, which covers the base of cellules 2—4; marginal spots 6 and 7 of the hindwing above large and sometimes united into a broad costal-marginal band; marginal spots of the under surface of both wings very minute or absent. In the ♂ the forewing is sometimes so completely black-grey above that only the basal part of veins 2—4 is whitish: ab. **striata** ab. nov. British East Africa: on the Kenia and near Nairobi,
- ruandana*. **M. ruandana** Strand is marked almost like *narcissus*, but differs from it and all the other forms of *sagala* in having the white ground-colour of the basal half of the forewing above and beneath replaced by a bright sulphur-yellow (or orange-yellow); hindwing above sulphur-yellow, beneath greenish white, sparsely sprinkled at the base with black, in the rest of the basal half with yellow scales, the costal margin narrowly orange-yellow and orange-yellow scales in the posterior half of the basal area. Ruanda in the virgin mountain-forest.

### 5. Genus: **Appias** Hbn.

This is one of the genera common to South Asia and Africa and is much richer in species in the East than in Africa. The African species are referred by BUTLER to his genera *Phrissura* and *Glutophrissa*. These two genera, however, cannot be distinguished from *Appias*. *Appias* nearly approaches *Pieris*, but differs from it in that the middle discocellular of the forewing is not straight and oblique as in *Pieris*, but sharply bent, forming almost a right angle with the subcostal vein. Moreover, the abdomen beneath has before the anus in the ♂ a long, in the ♀ a short or indistinct hair-pencil. When the forewing has submarginal spots they are not placed between the veins, as in *Pieris*, but on them. The ♀♀ often differ considerably from the ♂♂ in markings and shape. Hence their identity with the ♂♂ has not yet been certainly proved in all cases.

Very remarkable is the parallelism in colouring and markings which exists between the species of *Mylothris* and *Appias*.

- perlucens*. **A. perlucens** Btlr. (= *sylvia* Auriv.) This and the two following species differ from the others in having the dark marginal band of the forewing more or less distinctly developed also beneath. It is very similar to *A. rhodope* and only differs essentially in the male in the basal spot of the forewing being light lemon-yellow and not orange-yellow. In the ♀ both wings have a white ground-colour above and the forewing is lemon-yellow beneath at the base. Sierra Leone to Angola.



**A. bachi** Suff. (12 d ♀). Both wings above and beneath with white ground-colour, the forewing beneath *bachi*. at the base orange-yellow to the middle of the cell; both surfaces of the forewing with a grey marginal band, which is ornamented at the ends of the veins with triangular, black spots: the hindwing at the extremities of the veins with blackish marginal spots, which above are very large and united into a marginal band. The only known specimen of this species came from Guinea; it possibly represents only a female form of the preceding or the following species.

**A. rhodope** F. <sup>= *M. spica*.</sup> (11 d ♂, e ♀). In the ♂ the wings are white on both sides; the forewing has an *rhodope*. orange-yellow basal spot and a marginal band continuous to vein 2, which is above unicolorous black or spotted with grey, beneath more or less grey. In the ♀ the forewing has above a yellow ground-colour, a very broad, yellow-spotted, black marginal band, extending to the hinder angle, and a black basal part: beneath it is yellow to the base and has a lighter marginal band reduced by the extension of the yellow spots to a proximal curved line and black marginal spots: the hindwing is white; beneath at the base of the costal margin broadly yellow and has 8 large black marginal spots, almost contiguous above. Sierra Leone to the Congo region. ab. **dopero** Suff. only differs in the larger size of the orange-yellow basal patch of *dopero* the forewing, which reaches to beyond the middle of the cell; Cameroons.

**A. narcissus** Btlr. ♀. Forewing light ochre-yellow with a grey, crescent-shaped subapical band: veins *narcissus*. light yellowish, almost separating a row of black marginal spots from one another; hindwing light lemon-yellow with heart-shaped, dark brown marginal spots at the extremities of the veins; forewing beneath ochre-yellow with light cream-yellow costal margin and saffron-yellow basal spot in the cell; the grey subapical band indistinct, marginal spots smaller than above, fringes black; hindwing beneath butter-yellow, the base of the costal margin bright saffron-yellow, marginal spots as above; breast cream-yellow, abdomen flesh-coloured. Expanse 59 mm. Perhaps only a female form of *rhodope*. Angola.

**A. phaola** Dbl. (11 c ♂, d ♀). ♂: both wings above white to the base; the forewing above with narrow *phaola*. black costal margin and broad black marginal band, which is continuous at least to vein 2, but often to the hinder angle and in cellules 1b—3 has proximally a deep triangular incision; in cellules 4—6 it is either adorned with a small white spot or almost divided by a thin white line: forewing beneath white, at the apex and distal margin light yellowish for about the breadth of the marginal band of the upper surface and at the base bright yellow to vein 2; at the extremities of veins 1—8 are placed small, rounded marginal spots and on veins 2—4 black submarginal spots, of which those on veins 2 and 3 are more or less united with the corresponding marginal spot; the hindwing has on both sides distinct, rounded black marginal spots and is beneath slightly yellowish, almost cream-coloured, at the base of the costal margin bright yellow. In the ♀ the wings are above grey-white, or, especially the hindwing, yellowish white; the forewing is broadly suffused with blackish at the base and the costal margin, and its marginal band has in all the cellules distinct, somewhat rounded yellowish white spots: beneath the wings are coloured and marked quite as in the ♂, except that the submarginal spots of the forewing are somewhat larger and one is also present on vein 4; the marginal spots of the hindwing above are much larger than in the ♂. Is met with from Togo to the southern part of the Congo State. ♀-ab. **ochrea** Bart. only differs from the typical ♀ in having the forewing *ochrea*. light ochre-yellowish on both sides and the hindwing above dirty grey, tinged with yellowish and dusted with blackish; Togo.

**A. isokani** Gr.-Sm. is very nearly allied to the preceding species and perhaps only its East African *isokani*. race. The black marginal band of the forewing above is somewhat narrower and in cellules 1b—3 or 4 so deeply incised by the white ground-colour that it is almost broken up into sharply triangular spots. in cellules 5 and 6 the ground-colour enters far into the band as a thin white line; on the under surface the marginal spots are entirely absent and the base of the forewing is only very slightly yellowish; the marginal spots of the hindwing above and the submarginal spots on veins 2 and 3 of the underside of the forewing are either present as small dots or entirely absent, ab. **nagare** Gr.-Sm. In the ♀ the wings are above dirty yellowish, *nagare*. but marked as in the ♂, only with larger marginal spots on the hindwing above and with distinct submarginal spots on the forewing beneath. British East Africa.

**A. lasti** Gr.-Sm. (11e). Forewing on both sides white to the base, above with the black marginal *lasti*. band a little broader, only continuous to vein 3, and with black marginal spots on veins 1a and 2, beneath yolk-yellow at the apex and with black marginal dots at the extremities of the veins; hindwing above sulphur-yellow, beneath yolk-yellow, on both sides with 7 small rounded marginal spots at the extremities of the veins. The ♀ only differs from the ♂ in having the marginal band of the forewing twice as broad and the marginal spots of the hindwing much larger. German and British East Africa.

**A. majungana** Smith. Forewing white, on both sides with a reddish basal spot in the cell, which *majungana*. reaches its middle; above with broad black marginal band, which is proximally dentate at the veins and deeply divided by thin white streaks at the interneural folds; beneath at the distal margin yellowish without



black markings. Hindwing light yellowish; above with 5 small black dots at the extremities of the veins; beneath narrowly orange-red at the base of the costal margin, but otherwise without markings. North-west coast of Madagascar.

*confusa*

**A. confusa** Mab. ♂: similar to the preceding species, but larger and with yellow basal spot on the forewing; both wings with white ground-colour and beneath with indistinct, grey submarginal spots on the veins, but without marginal spots; hindwing above with 6 rounded marginal spots at the extremities of veins 2-7. ♀: the forewing above with long, free black streaks on veins 1-8 instead of the marginal band, the proximal ends of streaks 5-8 connected by a curved, black-grey, nebulous line; marginal spots of the hindwing somewhat larger than in the ♂; the under surface coloured and marked almost exactly as in the ♂.

*hemichlora*.

Madagascar. — **hemichlora** Mab. only differs in the larger size and the yellowish hindwing. Madagascar, at Diego Suarez.

*nyasana*.

**A. nyasana** Btlr. (22 a). A little known and somewhat doubtful species. BUTLER has evidently confused the sexes. The specimen first described by him as a ♂ is obviously a ♀ and is very similar to *Mylothris rueppelli*. The wings are white above with black, triangular marginal spots, which on the forewing are united at the margin and completely cover cellule 7, forewing on both sides broadly yellow in the basal part almost to the apex of the cell; beneath it is yellowish at the apex also and has 8 small black marginal dots on veins 1-8; the hindwing beneath is only whitish in the middle, otherwise yellowish and with 8 rounded black marginal spots. The form which is possibly the ♂ of this species is smaller than the ♀, has the forewing more pointed with straight distal margin and black marginal band, which is continuous to the hinder angle and proximally sharply dentate on veins 1-5, its red-yellow basal patch does not cover the base of cellules 1 and 2, but only the cell; both wings are white also beneath and have there no marginal spots. Distributed from Nyassaland to British East Africa.

*sabina*.

**A. sabina** Fldr. (11 f ♂, e ♀). ♂: forewing somewhat acutely produced; both wings above and beneath pure white with 7-8 black marginal spots, which only on the upperside of the forewing are somewhat joined together; forewing entirely without basal spot; hindwing beneath yellow at the base of the costal margin in cellule 8. The ♀ is smaller, has more rounded wings with grey-white ground-colour, free, streak-like marginal spots on the forewing above and large triangular ones on the hindwing; the base of the forewing is slightly

*udei*.

tinged with reddish. Sierra Leone to Angola. — **udei** Suff. (12 d) is the East African form of *sabina* and only differs in having the basal third of the forewing beneath orange-yellow and the underside of the hindwing and the distal part of the forewing cream-yellow. German East Africa. ♀-ab. **weberi** Suff. (12 d) differs

*weberi*.

from *sabina*-♀ in that the red-yellow basal patch of the forewing is larger and more brightly coloured and the marginal streaks on the forewing above are less sharply defined and connected by black dusting. Probably

*dubia*.

a female form of *udei*. ♀-ab. **dubia** Auriv. is very similar to the preceding ♀-form and only distinguished by the more sharply defined submarginal streaks on the forewing above, which are proximally thickened in

*phoebe*.

consequence of the presence of the submarginal spots; British East Africa. ♀-ab. **phoebe** Btlr. is distinguished by the large, triangular marginal spots of the forewing above, which are united into a marginal band, broad at the apex, and by having the hindwing yellow on both sides and the forewing yellow beneath at the apex; the red-yellow basal patch of the forewing almost as in *weberi*. Probably also a female form of *udei* or perhaps the ♀ of the form which has been described above as the ♂ of *nyasana*; British East Africa.

*epaphia*.

**A. epaphia**. The ♂ nearly approaches that of *sabina*, but is smaller and the black dot at the end of vein 1 on the forewing above is always wanting; the ♀ is quite unlike the ♂ and also differs very considerably from all the other African *Appias*-♀♀; its forewing has above a large black basal patch, which reaches the apex of the cell and is sometimes bounded posteriorly by the median, sometimes covers also the base of cellules 1a and 1b to vein 2 and extends to the hindmargin; the distal area is occupied by a very broad marginal band, which at the costal margin almost reaches the middle of the wing and encloses 2-5 light submarginal spots in cellules 6-9; the hindwing has above large marginal spots or usually a very broad black marginal band; beneath the forewing is tinged with yellowish at the base and has a large black spot in the apex of the cell and a black submarginal band, the hindwing is yellow at the base of the costal margin and otherwise either without markings or with a black marginal band. — **epaphia** Cr. (11 f). ♂: forewing beneath bright yellow at the base, the marginal spots of the under surface and of the hindwing above

*albida*.

sometimes well developed, sometimes absent. ♀: wings with white ground-colour; basal part of cellules 1a and 1b on the upperside of the forewing sometimes black, sometimes whitish; hindwing above with broad black marginal band. Occurs everywhere on the continent of Africa as well as on Madagascar and the

*flavida*.

Comoro Islands. ♀-ab. **albida** Mab. Forewing white to the base in cellules 1a and 1b; hindwing above with free marginal spots at the extremities of the veins; both wings beneath without marginal spots; Nyassa-

*haendeli*.

land and Madagascar. ♀-ab. **flavida** Mab. only differs from the type-form in the yellowish ground-colour and dull black markings; Congo to South Africa, Madagascar. — **haendeli** Suff. is in the ♂ almost as large as *sabina* and differs from the type-form in having the forewing white beneath at the base; the hindwing above and both wings beneath with distinct rounded marginal dots. German East Africa, at Dar-es-Salaam.



— **contracta** Btlr., ♂, is on an average somewhat larger than the type-form, with the marginal band on the upperside of the forewing more weakly developed; the marginal spots on the underside of both wings and the upperside of the hindwing are usually entirely absent; the forewing beneath slightly yellowish at the base. British East Africa and Equatoria. *contracta.*

## 6. Genus: **Pieris** Schrank.

The palpi project beyond the head and are anteriorly clothed with long, stiff hairs; the terminal joint is as long as or longer than the second and pointed. The antennae have a distinct, often knob-shaped club. The wings are usually broad and have a white, rarely yellow ground-colour. The precostal vein of the hindwing is curved distad. The forewing has only 11 or 10 veins, as vein 9 is always absent and sometimes also vein 8 aborted; vein 6 always arises beyond the apex of the cell from the stalk of 7 and 8; vein 11 is sometimes united soon after its origin with vein 12, forming a closed basal cell. *Pieris* is at once distinguished from *Appias* by the obliquely placed and almost straight discocellular of the forewing.

The differences in neuration, by which it has been attempted to divide this extensive genus into several, are either not constant or intergrade so gradually that sharp and natural dividing-lines cannot be drawn.

The Ethiopian Region possesses numerous species, some of which are still insufficiently known, especially as regards their females.

The early stages are only known of two African species. The larva is fine-haired and almost cylindrical with small head. Pupa slender, posteriorly much narrowed, with a more or less raised dorsal line and a line on each side of the first three abdominal segments; head with sharp point; a small protuberance on the middle of the mesothorax and at each side of the second abdominal segment.

The Ethiopian species may be divided into four groups, which are easy to distinguish from the following synopsis:

### Synopsis of the Groups.

- A. Vein 8 of the forewing always present and little or not at all shorter than vein 7, with which it forms a fork.
  - a) The forewing beneath usually with black marginal spots at the extremities of the veins and also with black submarginal spots in cellules 3—6 and 8; the marginal and submarginal spots are usually united into a light-spotted marginal band, occasionally they are completely separated and still more rarely the marginal spots are altogether absent, in which latter case, however, the submarginal spots are united into a transverse band placed between the costal margin and vein 3. — *Belenois* Hbn. Calypso Group.
  - b) The forewing beneath either without marginal and submarginal spots or only with small marginal spots; rarely there are also 1—4 quite free submarginal spots, of which the one in cellule 3 is sometimes large and deep black, especially in the ♀. — *Pinacopteryx* Wallengr. Pigea Group.
- B. Vein 8 of the forewing is either entirely absent or very short, much less than half the length of vein 7. The middle discocellular of both wings much shorter than the lower.
  - a) The hindwing beneath with green or greenish spots and streaks. — *Synchlora* Hbn. Daplidice Group.
  - b) The hindwing beneath without green markings. — *Pieris* s. str. Brassicae Group.

### Calypso Group (*Belenois* Hbn.).

The first subcostal vein of the forewing often joins the costal, but may also in the same species run quite free. The anal claspers of the ♂ are large and with long points at the apex.

**P. raffrayi** differs from all the other African species in having the hindwing beneath unicolorous black, with the base of the costal margin and usually also a costal-marginal spot before the apex orange-yellow; the forewing on both sides white in the basal part almost to the apex of the cell and the hinder angle, behind that deep black with or without small, light streaks before the apex, beneath with yellow basal spot. — **raffrayi** *raffrayi.* Oberth. (12f, 13a, also figured as *margaritacea*). Hindwing above grey-blue to or almost to the apex of the cell, then with a black marginal band 9—12 mm in breadth. German East Africa to Abyssinia. — **margaritacea** E. Sharpe. The hindwing above bluish white to beyond the middle with the black marginal band only 5 mm in breadth and more or less light spotted. German and British East Africa. (The specimen figured 13a as *margaritacea* belongs to the form *raffrayi*, only slightly approaching *margaritacea* in having the slightly bluish white spots before the apex). *margaritacea.*

**P. gidica.** Forewing of the ♂ with sharply produced apex and straight or slightly incurved, entire distal margin, the fringes unspotted. The black submarginal spot in cellule 4 of the forewing is entirely absent or is smaller and much narrower than submarginal spots 3 and 5; the hindwing beneath almost midway



between the cell and the border with a dark, dentate transverse line, which is interrupted in cellule 4 and in each of cellules 2, 3 and 5 sends out a streak distally, but in cellule 1b two streaks: these streaks reach or intersect the lunate submarginal line, which is usually interrupted in the middle of each cellule; the forewing of the ♂ always above with white ground-colour and its marginal band with 2 rows of white spots. —

*gidica*. **gidica** Godt. has only a narrow transverse bar at the end of the cell of the forewing, which is not connected with the costal margin; hindwing of the ♂ above with a black, white-spotted marginal band 2—3 mm. in breadth, beneath white with a black spot at the apex of the cell, black discal line and black submarginal line, but without darkened veins; marginal band of the forewing spotted with white; the ♀ is unknown to me. Cape Colony. —

*westwoodi*. **westwoodi** Wallengr. (13a) differs in the ♂ in that the transverse spot at the end of the cell of the forewing is connected by a black bar with the costal margin, the hindwing above has only free triangular marginal spots and beneath is distinguished by the veins being dark to the base; the transverse spot at the end of the cell of the forewing does not nearly reach vein 3. The ♀ is quite unlike the ♂, has on the upperside of both wings an unspotted marginal band 5—9 mm. in breadth and the basal area of both wings more or less broadly darkened; the transverse spot at the end of the cell on the forewing is very broad; the under surface is marked almost as in the ♂, only with somewhat thicker black markings: the ground-colour of both

*doubledayi*. wings is either whitish or ochre-yellow = ♀-ab. **doubledayi** Wallengr. The larva is spindle-shaped, with light bluish green head and body, on each segment 2 white dorsal spots, lives on species of Capparis. Pupa light

*abyssinica*. green with a few black dots on the dorsum. South Africa to Abyssinia, the Soudan and Senegal. f. **abyssinica** Luc. (13a) is the dry-season form of *westwoodi* and is distinguished by the somewhat reduced black markings of the upper surface and especially by the dark, reddish grey underside of the hindwing, which is divided by a white longitudinal streak: the ♀ is fairly similar to the ♂, but has a more obtuse forewing and thicker

*occidentis*. black markings. South Africa to Abyssinia and the Soudan. — **occidentis** Btlr. nearly approaches *westwoodi*, but is somewhat larger and has the transverse spot at the end of the cell on the forewing prolonged posteriorly,

*tschadica*. reaching vein 3. Congo region and German East Africa. — **tschadica** Auriv. (12f) agrees with the last forms in having the transverse spot of the cell on the forewing united with the costal margin, but differs from all the other forms in the broad black marginal band of both wings, which is above almost unspotted, but beneath adorned with a row of small white spots; beneath the hindwing is white to the black marginal band, which is widened at the anal angle, there being no other markings except a small black spot at the apex of the cell and an orange-yellow streak at the base of the costal margin: the ♀ has the ground-colour of the hindwing yellowish and the marginal bands still broader. North Cameroons in the neighbourhood of Lake Chad.

The following closely allied species have a more obtuse forewing with undulate distal margin and white-dusted fringes at the ends of the interneural folds. The forewing beneath either with continuous black, light-spotted marginal band, or with dark, angular submarginal spots connecting the veins. On the under surface of the forewing the light marginal spots of cellules 3—8 are completely separated from the margin by a thin black marginal line connecting the extremities of the veins. Submarginal spot 4 on the forewing is always well developed and placed nearer to the margin than spots 3 and 5. The 1st subcostal vein of the forewing seems always to be connected with the costal vein.

*creona*. **P. creona** Cr. (13b). Both wings above with white ground-colour and continuous black marginal band, which on the hindwing in the ♂ is only 5—6 mm. in breadth, but in the ♀ almost reaches the apex of the cell and is either quite without spots or has only a white spot in each of cellules 4—6: the lower cross-vein of the forewing only with a small, free black streak or dot; hindwing beneath with yellowish ground-colour,

*caeca*. its marginal band with complete rows of whitish (♂) or yellow (♀) spots. Senegal to the Niger. — ab. **caeca** Cammav. Ground-colour of both wings yellowish white; the forewing entirely without discal dot. Abyssinia. —

*sigirrensis*. ab. **sigirrensis** Strand. Marginal band on the upperside of the hindwing in the ♂ unspotted or only with one light spot, in the ♀ with a light spot at the costal margin. Niger.

*severina* **P. severina** Cr. (13b). Forewing with a small black dot at the end of the cell; differs in the ♂ from *creona* in having the marginal band of the hindwing somewhat narrower and enclosing 4—5 distinct white spots; in the ♀ in the more or less yellowish ground-colour and the narrower marginal band of the hindwing, which does not nearly reach the cell. Larva above dark green, beneath whitish, clothed throughout with short, very fine white hairs; each segment with a subdorsal yellow spot; lateral line light yellow; head dark brown with white dots, first segment yellowish at the anterior edge: lives on Capparis. Pupa bluish green with 2 yellow spots on each segment of the abdomen and 4 at each side of the thorax; a thin black dorsal line and a small white tubercle with black base on each side at the angle of the wing-cases. Common in the whole

*agrippina* of South and West Africa, northwards to Angola and British East Africa, also on Madagascar. — **agrippina** Fldr. (12f). Hindwing above only with free triangular black marginal spots at the extremities of the veins, beneath with violet-grey ground-colour, otherwise agreeing with the type-form. South and East Africa. —

*elisa*. **elisa** Voll. is a small island-form with an expanse of only 38—47 mm. and beneath with brown marginal spots; the forewing at the end of the cell sometimes only with a dot, sometimes with a transverse bar; hindwing



with light-spotted marginal band. Comoro Islands. — **leucogyne** *Btlr.* has a transverse stripe at the end of the cell of the forewing, but only free submarginal spots on the upperside of the hindwing. Arabia, near Aden. — **boguensis** *Fldr.* has a black transverse stripe at the end of the cell of the forewing, joining the costal margin, and a light-spotted marginal band, 4—5 mm. in breadth, on the upperside of the hindwing. British East Africa and Abyssinia. — **infida** *Btlr.* (13b) has a black transverse stripe, which is very thick especially in the ♀, at the end of the cell of the forewing, and broad marginal bands, often almost without spots above; ground-colour in the ♀ usually yellowish. German East Africa to Somaliland and Equatoria.

**P. mesentina** *Cr.* (part I, vol. I, pl. 21 d, e). Wings above with white (♂) or whitish (♀) ground-colour; forewing above with a black transverse stripe at the end of the cell, which covers both the lower and median discocellular and also reaches the costal margin; very similar to certain forms of *severina* and only distinguished from them by having the light marginal spots in cellules 3—8 on both sides (♂) or at least on the under surface (♀) large and distinct and as broad as or broader than the black marginal band which bounds it proximally; the hindwing either only with black marginal spots at the extremities of the veins, or usually also with a narrow black submarginal line, which, forming a curve in each cellule, encloses large, rounded white marginal spots; all the veins on the underside of the hindwing always brown or blackish. — Larva light yellow, above greenish, on each side a broad, brownish lateral line; head reddish; lives on species of *Capparis*. Pupa light brown, on the dorsum spotted with dark brown; the tubercles at the base of the abdomen black, the dorsal line and the lateral lines of the abdomen white. Common everywhere on the continent of Africa and in Arabia; sometimes occurs in great abundance and migrates in swarms from one district to another. — **auriginea** *Btlr.* has the hindwing ochre-yellow or cream-yellow beneath and is probably an extreme seasonal form. Ruwenzori.

The following species are marked almost exactly like the preceding ones, but differ in that the light marginal spots of cellules 3—8 on the under surface of the forewing extend quite to the distal margin, are only separated by the black veins and are proximally bounded by the black submarginal band. Sometimes the veins are scarcely darker than the ground-colour and hence the submarginal spots are confluent. The first subcostal vein of the forewing is sometimes free, sometimes more or less united with the costal vein.

**P. zochalia**. Forewing with black spot or transverse streak at the end of the cell; marginal band in the ♂ above always with 3—5 white spots, in the ♀ sometimes unspotted, but the discal spots in this case very thick and reaching the distal margin; hindwing beneath with distinct markings. — **voeltzkowi** *Karsch* (13d). Both wings above with white ground-colour; hindwing beneath with white ground-colour and without dark longitudinal lines in the cell; the base of the costal margin, a longitudinal streak at the inner margin and in 1c, as well as small marginal spots at the extremities of the interneural folds orange-yellow; hindwing above in the ♂ only with black marginal spots, in the ♀ also with submarginal line; forewing with transverse bar at the end of the cell. Madagascar. — **zochalia** *Bdv.* (12e) has a black transverse bar at the end of the cell of the forewing, which reaches the costal margin; hindwing beneath cream-yellow with distinct dark markings and two fine longitudinal lines in the cell; hindwing above white (♂) or bright yellow (♀) with black spots at the extremities of the veins and a fine, more or less distinct and complete submarginal line; forewing with white ground-colour on both sides. Is fond of wooded districts and occurs from Cape Colony to British East Africa, also met with by A. SCHULTZE in the interior of the Cameroons region near Bamenda. — **ab. agrippinides** *Holl.* only differs from *zochalia* in the entire absence of the submarginal line on the upperside of the hindwing. Amongst the type-form. — f. **tanganjikae** *Lanz* (= *formosa* *Btlr.*) (13b, c) is probably a seasonal form of *zochalia* and is distinguished by having the discal spot of the forewing in the ♂ very small and rounded, not reaching the costal margin, and the hindwing above without submarginal line; the ♀ scarcely differs from that of *zochalia*. German and British East Africa. — ♀-ab. **ochracea** *Heron* is a female form in which the forewing also is yellow above. Ruwenzori.

**P. crawshayi** *Btlr.* (13c) is nearly allied to *zochalia*, but has the black marginal band on the forewing above almost without spots, continuous to the hinder angle and proximally widened in cellule 3, the distal spot of the forewing rounded and usually not connected with the costal margin and small punctiform submarginal spots on the upperside of the hindwing; the markings on the under surface are the same as in *zochalia*, but very dull and indistinct; the hindwing and the distal part of the forewing have a reddish grey ground-colour beneath: in the ♀ the black submarginal spots of the forewing above are almost completely separated by white spots from the marginal band, which is of uniform breadth. British Central Africa, Nyassaland and British East Africa. — **lata** *Neave* is larger and has the markings of the under surface somewhat more distinct. Lualaba district.

**P. grandidieri** *Mab.* (13e) has no discal spot on the forewing, thus differing from all the preceding forms. Both wings with white ground-colour and at the extremities of the veins with black marginal spots, which are separated beneath and on the upperside of the hindwing, but on the forewing above are united into a narrow marginal band; inside this marginal band runs between the costal margin and vein 3 a rather



slender submarginal line, which encloses white spots in cellules 3—6 and 8; beneath the forewing is orange-yellow at the base almost to the middle of the cell; the hindwing is beneath ornamented with small orange-yellow spots and streaks at the base, across the middle, before the distal margin and at the margin between the black spots; the veins are not darkened. Madagascar. — **peeli** Dixey (22b) is the continental form of *grandidieri* and only differs in the less developed black markings; the submarginal line of the forewing above is almost entirely absent in the ♂ and very narrow in the ♀. Somaliland.

The following series of species differ from the preceding in that the submarginal line or the angled submarginal spots of the hindwing beneath are replaced by rounded dark submarginal spots. These submarginal spots are at least in cellules 6 and 7 completely separated from one another and from the veins and often occur also on the upper surface. Sometimes these submarginal spots are entirely absent and the hindwing has only black marginal spots at the extremities of the veins. The first subcostal vein of the forewing is almost always free.

*subeida.* **P. subeida** Fldr. (13c). Hindwing on both surfaces or at least beneath with a black transverse spot at the end of the cell between 4 and 5; the veins of the hindwing beneath always more or less broadly dark-margined; forewing at the end of the cell with a rounded black spot, which is more or less completely united with a pointed, triangular costal spot; marginal band of the forewing formed just as in *severina* and *voeltzkowi*, its light spots above narrow and streak-like, beneath much larger and yellowish, but completely separated from the distal margin by a fine black line; hindwing above with a black marginal band 4—5 mm. in breadth, which is formed by the rounded submarginal spots of cellules 2—4 (—5) being united with the very large marginal spots, beneath with light yellow ground-colour; in the ♀ the wings are more rounded and all the black markings more extended. British East Africa to Kordofan. — **sylvander** Smith (22a, b) only differs in having the submarginal spots of the hindwing above more isolated or sometimes almost entirely absent. In the north-eastern part of the Congo Free State. — **frobeniusi** Strand is above similar to the type-form, but differs from it beneath in that the forewing is sulphur-yellow between the black submarginal band and the distal margin, without black dusting on the veins, and has a yellow longitudinal streak in the cell; the veins of the hindwing beneath are only darkened between the distal margin and the submarginal spots. At the Niger near Sigirri.

*calypso.* **P. calypso** has an expanse of 52—65 mm. and a large black spot on the under surface of the hindwing at the end of the cell; the veins of the hindwing beneath are never darkened; the upperside of the hindwing in the ♂ usually only with marginal spots, in the ♀ also with large submarginal spots, which are more or less united with the marginal spots into a marginal band, on the underside both the marginal and submarginal spots are always present and well separated. — **calypso** Drury (13d). Under surface of the hindwing light ochre-yellow, at the base of the costal margin yolk-yellow, the forewing at the end of the cell in the ♀ with a broad transverse bar, or in the ♂ at least beneath with a triangular costal spot, which is connected by a thin oblique line with the rounded discal spot on the lower discocellular; on the underside of the forewing the marginal spots are large and joined to the submarginal spots by the black veins; the light spots which are thus enclosed in cellules 5—8 are yellowish; in the ♀ the upperside of the wings is more or less broadly covered with blackish scales at the base. Sierra Leone to the Congo region. — *dentigera.* **dentigera** Btlr. (15b) has like the type-form the base of the costal margin on the hindwing beneath yolk-yellow, but the ground-colour of the hindwing beneath in the ♂ is almost pure white; the forewing of the ♂ without black costal spot opposite to the rounded discal spot and at least beneath with the submarginal spots entirely separated from the marginal spots; the ♀ only differs from that of *calypso* in having the submarginal spots of the hindwing isolated also above. Congo region to Equatoria. — *welwitschi.* **welwitschi** Rogenh. (12e). Hindwing beneath at the base of the costal margin vermilion; its ground-colour varies from bright ochre-yellow to almost white with a longitudinal streak in 1c and large spots at the distal margin yolk-yellow, the submarginal spots are usually distinct above also, but small and punctiform; the forewing on both surfaces with a large triangular costal spot in the middle of the costal margin, the apex of which usually reaches the discal spot; the marginal spots of the forewing beneath are small and more (♂) or less widely separated from the free or nearly free submarginal spots, the interspace between the submarginal spots and the distal margin is pure white like the ground-colour (♂) or slightly yellowish; in the ♀ the hindwing on both surfaces and the forewing beneath at the base are ochre-yellow. Angola and Congo region. — *hospitis.* **hospitis** Weym. (= *ratidengi* Suff.) has the basal part of the costal margin on the hindwing beneath vermilion as in *welwitschi* and only differs from this form in the absence of the black costal spot at the middle of the costal margin on the forewing; the interspace between the margin and the submarginal spots on the underside of the forewing is bright yolk-yellow. German East Africa.

*ogygia.* **P. ogygia** Trim. Hindwing on both surfaces without dark spot at the apex of the cell, forewing on the other hand above and beneath with a black transverse streak at the end of the cell, which almost or quite reaches the costal margin; above both wings have a white ground-colour, beneath the hindwing and the apex of the forewing are bright yolk-yellow and the base of the forewing orange-yellow; forewing above with large marginal spots united into a marginal line, which is continuous as far as vein 2, and 4 rounded, free or almost free submarginal spots in cellules 3, 5, 6 and 8; the submarginal spot of cellule 4 is absent or very



minute; beneath the marginal spots of the forewing are smaller and completely separated; hindwing on both surfaces with free black marginal spots, which above are large and more rounded than beneath: the submarginal spots are small and in the ♂ wanting on the upperside; all the veins of the hindwing beneath are finely blackish and the base of the costal margin orange-red. A rare species, hitherto only known from Natal.

**P. thysa.** Both wings above and beneath without dark spot at the end of the cell; the submarginal spots on the upperside of the hindwing small, usually separated or almost separated from one another and from the marginal spots, the submarginal spot of cellule 4 nearly always absent; the base of the costal margin on the hindwing beneath vermilion; the forewing beneath at the base with a usually large, fiery red or orange-yellow basal spot; the black marginal spots of the under surface are all separated and often divided into two by the whitish extremities of the veins, sometimes they are entirely absent. — **thysa** *Hpff.* (13 e, 14 a). Marginal spots of both wings well developed above and beneath, submarginal spots free; on the under surface the hindwing and the apex of the forewing are bright yolk-yellow; upper surface in the ♂ white or slightly yellowish to the base, in the ♀ whitish or yellowish and at the base more or less strongly darkened to vein 3. Distributed from the estuary of the Congo to South Africa and from there to Somaliland. — **meldolae** *Btlr.* differs from the type-form in having the black markings much reduced; the marginal spots of the forewing are above separated and beneath entirely absent; those of the hindwing are absent on both sides; the submarginal spots are small and punctiform or absent. Loanda. — In **balangensis** *Rbl. & Rog.* (15 q) the underside of the forewing is white at the apex, but that of the hindwing yellow, the submarginal spots of the forewing above free and the marginal spots well developed. German East Africa. — ab. **macularis** *Auriv.* (14 a) has the submarginal spots on the forewing above somewhat larger and slightly joined to the marginal spots, the under surface of the hindwing almost white and the marginal spots of the underside completely divided. German East Africa. — **malaria** *Suff.* differs from the type-form in the broader marginal band of the forewing above and in having the submarginal spot confluent with it; in the ♀ the forewing is yellowish white above and the hindwing light ochre-yellow. Loango. — ab. **alarmi** *Suff.* is only distinguished by the submarginal spots of the forewing being absent on both surfaces and those of the hindwing absent above and only indicated by dots beneath; is probably scarcely different from *meldolae*. German East Africa. — ♀-ab. **obumbrata** *Weym.* is beneath similar to *thysa* ♀♀, but has above a pure white ground-colour with the dark markings more extended; the dark costal margin reaches vein 7 in the apical third, the marginal spots of both wings and the submarginal spots of the hindwing are much larger; the light orange-coloured dusting in the basal half of the forewing is absent, this part of the wing being occupied instead by a large, violet-brown triangle, which is distally angled and extends nearly to the apex of the cell, over  $\frac{1}{3}$  of cellule 2,  $\frac{3}{4}$  of cellule 1 b and the whole of cellule 1 a; the brownish violet colour reaches from the costal margin to the hindmargin and at the hinder angle shades off into the dark brown marginal spots; also on vein 2 it reaches the apex of the marginal spot, so that in cellule 1 b a spot of the pure white ground-colour of about 3 mm. in size is separated off; the hindwing above is pure white in the distal half, only the base of the costal margin is reddish yellow and both the cell and 1 c basally dusted with light brownish violet. Zanzibar. — ♀-ab. **rimala** *Suff.* (12 e) is an extreme melanotic form and, as may be seen from the figure, with the greater part of the upper surface suffused with black-brown; on the under surface on the contrary both wings are but little darker than in the type-form, the forewing being light grey and the hindwing slightly darkened by black scales. From the Albert Nyanza.

**P. larima** *Bdv.* is probably nearly allied to *thysa*, but as I know no form which fits the description, I reproduce the original description. "Wings white, at the base slightly dusted with blackish scales and at the distal margin somewhat tinged with yellowish; both wings with black dots at the extremities of the veins, which are somewhat smaller on the hindwing; apex of the forewing black-brown with the marginal dots united; forewing between the cell and the distal margin with a row of three thick black dots, of which the anterior one adjoins the black apex; the hindwing has also before the marginal spots another row of smaller and more indistinct dots: the wings beneath ochre-yellow; the forewing at the base orange-yellow, in the middle whitish and with two submarginal spots, which correspond to the posterior two on the upper surface: the hindwing with the basal part of the costal margin orange-yellow and a row of submarginal dots of the same colour." Senegal.

**P. rubrosignata** *Weym.* (? = *pida* *Neave*). This form, which is unknown to me, is referred by WEYMER as a variety to *theora*, but seems to me to be a form of *thysa*. Both wings without discal spots; costal margin of the hindwing beneath from the base to the middle bright vermilion, from there to the distal margin gold-yellow; marginal and submarginal spots of the forewing above are united to form a white-spotted marginal band as in *theora*; marginal and submarginal spots of the hindwing above present, but smaller than in *theora*; the forewing beneath at the base with a large orange-yellow spot, at the distal margin with small spots at the extremities of the veins and before the distal margin with five quite free submarginal spots in cellules 4–6 and 8; hindwing beneath with small marginal spots divided by the white extremities of the veins, seven rather large submarginal spots and gold-yellow spots between the black marginal spots. Angola.



slender submarginal line, which encloses white spots in cellules 3—6 and 8: beneath the forewing is orange-yellow at the base almost to the middle of the cell; the hindwing is beneath ornamented with small orange-yellow spots and streaks at the base, across the middle, before the distal margin and at the margin between the black spots; the veins are not darkened. Madagascar. — **peeli** Dixey (22b) is the continental form of *grandidieri* and only differs in the less developed black markings; the submarginal line of the forewing above is almost entirely absent in the ♂ and very narrow in the ♀. Somaliland.

The following series of species differ from the preceding in that the submarginal line or the angled submarginal spots of the hindwing beneath are replaced by rounded dark submarginal spots. These submarginal spots are at least in cellules 6 and 7 completely separated from one another and from the veins and often occur also on the upper surface. Sometimes these submarginal spots are entirely absent and the hindwing has only black marginal spots at the extremities of the veins. The first subcostal vein of the forewing is almost always free.

*subeida.* **P. subeida** Fldr. (13c). Hindwing on both surfaces or at least beneath with a black transverse spot at the end of the cell between 4 and 5; the veins of the hindwing beneath always more or less broadly dark-margined; forewing at the end of the cell with a rounded black spot, which is more or less completely united with a pointed, triangular costal spot; marginal band of the forewing formed just as in *severina* and *roeltzkowi*, its light spots above narrow and streak-like, beneath much larger and yellowish, but completely separated from the distal margin by a fine black line; hindwing above with a black marginal band 4—5 mm. in breadth, which is formed by the rounded submarginal spots of cellules 2—4 (—5) being united with the very large marginal spots, beneath with light yellow ground-colour; in the ♀ the wings are more rounded and all the black markings more extended. British East Africa to Kordofan. — **sylvander** Smith (22a, b) only differs in having the submarginal spots of the hindwing above more isolated or sometimes almost entirely absent. In the north-eastern part of the Congo Free State. — **frobeniusi** Strand is above similar to the type-form, but differs from it beneath in that the forewing is sulphur-yellow between the black submarginal band and the distal margin, without black dusting on the veins, and has a yellow longitudinal streak in the cell; the veins of the hindwing beneath are only darkened between the distal margin and the submarginal spots. At the Niger near Sigiiri.

*calypso.* **P. calypso** has an expanse of 52—65 mm. and a large black spot on the under surface of the hindwing at the end of the cell; the veins of the hindwing beneath are never darkened; the upperside of the hindwing in the ♂ usually only with marginal spots, in the ♀ also with large submarginal spots, which are more or less united with the marginal spots into a marginal band, on the underside both the marginal and submarginal spots are always present and well separated. — **calypso** Drury (13d). Under surface of the hindwing light ochre-yellow, at the base of the costal margin yolk-yellow, the forewing at the end of the cell in the ♀ with a broad transverse bar, or in the ♂ at least beneath with a triangular costal spot, which is connected by a thin oblique line with the rounded discal spot on the lower discocellular; on the underside of the forewing the marginal spots are large and joined to the submarginal spots by the black veins; the light spots which are thus enclosed in cellules 5—8 are yellowish; in the ♀ the upperside of the wings is more or less broadly covered with blackish scales at the base. Sierra Leone to the Congo region. — *dentigera.* **dentigera** Btlr. (15b) has like the type-form the base of the costal margin on the hindwing beneath yolk-yellow, but the ground-colour of the hindwing beneath in the ♂ is almost pure white; the forewing of the ♂ without black costal spot opposite to the rounded discal spot and at least beneath with the submarginal spots entirely separated from the marginal spots; the ♀ only differs from that of *calypso* in having the submarginal spots of the hindwing isolated also above. Congo region to Equatoria. — *welwitschi.* **welwitschi** Rogenh. (12e). Hindwing beneath at the base of the costal margin vermilion; its ground-colour varies from bright ochre-yellow to almost white with a longitudinal streak in 1c and large spots at the distal margin yolk-yellow, the submarginal spots are usually distinct above also, but small and punctiform; the forewing on both surfaces with a large triangular costal spot in the middle of the costal margin, the apex of which usually reaches the discal spot; the marginal spots of the forewing beneath are small and more (♂) or less widely separated from the free or nearly free submarginal spots, the interspace between the submarginal spots and the distal margin is pure white like the ground-colour (♂) or slightly yellowish; in the ♀ the hindwing on both surfaces and the forewing beneath at the base are ochre-yellow. Angola and Congo region. — *hospitis.* **hospitis** Weym. (= *ratidengi* Suff.) has the basal part of the costal margin on the hindwing beneath vermilion as in *welwitschi* and only differs from this form in the absence of the black costal spot at the middle of the costal margin on the forewing; the interspace between the margin and the submarginal spots on the underside of the forewing is bright yolk-yellow. German East Africa.

*ogygia.* **P. ogygia** Trim. Hindwing on both surfaces without dark spot at the apex of the cell, forewing on the other hand above and beneath with a black transverse streak at the end of the cell, which almost or quite reaches the costal margin; above both wings have a white ground-colour, beneath the hindwing and the apex of the forewing are bright yolk-yellow and the base of the forewing orange-yellow; forewing above with large marginal spots united into a marginal line, which is continuous as far as vein 2, and 4 rounded, free or almost free submarginal spots in cellules 3, 5, 6 and 8; the submarginal spot of cellule 4 is absent or very



minute; beneath the marginal spots of the forewing are smaller and completely separated; hindwing on both surfaces with free black marginal spots, which above are large and more rounded than beneath; the submarginal spots are small and in the ♂ wanting on the upperside; all the veins of the hindwing beneath are finely blackish and the base of the costal margin orange-red. A rare species, hitherto only known from Natal.

**P. thysa.** Both wings above and beneath without dark spot at the end of the cell; the submarginal spots on the upperside of the hindwing small, usually separated or almost separated from one another and from the marginal spots, the submarginal spot of cellule 4 nearly always absent; the base of the costal margin on the hindwing beneath vermilion; the forewing beneath at the base with a usually large, fiery red or orange-yellow basal spot; the black marginal spots of the under surface are all separated and often divided into two by the whitish extremities of the veins, sometimes they are entirely absent. — **thysa** *Hpff.* (13 e, 14 a). Marginal spots of both wings well developed above and beneath, submarginal spots free; on the under surface the hindwing and the apex of the forewing are bright yellows; upper surface in the ♂ white or slightly yellowish to the base, in the ♀ whitish or yellowish and at the base more or less strongly darkened to vein 3. Distributed from the estuary of the Congo to South Africa and from there to Somaliland. — **meldolae** *Btlr.* differs from the type-form in having the black markings much reduced; the marginal spots of the forewing are above separated and beneath entirely absent; those of the hindwing are absent on both sides; the submarginal spots are small and punctiform or absent. Loanda. — In **balangensis** *Rbl. & Rog.* (15 q) the underside of the forewing is white at the apex, but that of the hindwing yellow. the submarginal spots of the forewing above free and the marginal spots well developed. German East Africa. — ab. **macularis** *Auriv.* (14 a) has the submarginal spots on the forewing above somewhat larger and slightly joined to the marginal spots. the under surface of the hindwing almost white and the marginal spots of the underside completely divided. German East Africa. — **malaria** *Suff.* differs from the type-form in the broader marginal band of the forewing above and in having the submarginal spot confluent with it: in the ♀ the forewing is yellowish white above and the hindwing light ochre-yellow. Loango. — ab. **alarmi** *Suff.* is only distinguished by the submarginal spots of the forewing being absent on both surfaces and those of the hindwing absent above and only indicated by dots beneath; is probably scarcely different from *meldolae*. German East Africa. — ♀-ab. **obumbrata** *Weym.* is beneath similar to *thysa* ♀♀, but has above a pure white ground-colour with the dark markings more extended; the dark costal margin reaches vein 7 in the apical third, the marginal spots of both wings and the submarginal spots of the hindwing are much larger; the light orange-coloured dusting in the basal half of the forewing is absent, this part of the wing being occupied instead by a large, violet-brown triangle, which is distally angled and extends nearly to the apex of the cell, over  $\frac{1}{3}$  of cellule 2,  $\frac{3}{4}$  of cellule 1 b and the whole of cellule 1 a; the brownish violet colour reaches from the costal margin to the hindmargin and at the hinder angle shades off into the dark brown marginal spots; also on vein 2 it reaches the apex of the marginal spot, so that in cellule 1 b a spot of the pure white ground-colour of about 3 mm. in size is separated off; the hindwing above is pure white in the distal half, only the base of the costal margin is reddish yellow and both the cell and 1 c basally dusted with light brownish violet. Zanzibar. — ♀-ab. **rimala** *Suff.* (12 e) is an extreme melanotic form and, as may be seen from the figure, with the greater part of the upper surface suffused with black-brown; on the under surface on the contrary both wings are but little darker than in the type-form, the forewing being light grey and the hindwing slightly darkened by black scales. From the Albert Nyanza.

**P. larima** *Bdv.* is probably nearly allied to *thysa*, but as I know no form which fits the description, I reproduce the original description. "Wings white, at the base slightly dusted with blackish scales and at the distal margin somewhat tinged with yellowish; both wings with black dots at the extremities of the veins, which are somewhat smaller on the hindwing; apex of the forewing black-brown with the marginal dots united; forewing between the cell and the distal margin with a row of three thick black dots, of which the anterior one adjoins the black apex; the hindwing has also before the marginal spots another row of smaller and more indistinct dots; the wings beneath ochre-yellow; the forewing at the base orange-yellow. in the middle whitish and with two submarginal spots, which correspond to the posterior two on the upper surface; the hindwing with the basal part of the costal margin orange-yellow and a row of submarginal dots of the same colour." Senegal.

**P. rubrosignata** *Weym.* (? = *pida* *Neave*). This form, which is unknown to me, is referred by WEYMER as a variety to *theora*, but seems to me to be a form of *thysa*. Both wings without discal spots; costal margin of the hindwing beneath from the base to the middle bright vermilion, from there to the distal margin gold-yellow; marginal and submarginal spots of the forewing above are united to form a white-spotted marginal band as in *theora*; marginal and submarginal spots of the hindwing above present, but smaller than in *theora*; the forewing beneath at the base with a large orange-yellow spot, at the distal margin with small spots at the extremities of the veins and before the distal margin with five quite free submarginal spots in cellules 4-6 and 8; hindwing beneath with small marginal spots divided by the white extremities of the veins, seven rather large submarginal spots and gold-yellow spots between the black marginal spots. Angola.



**P. theora.** Both wings, at least in the ♂, above and beneath without spot at the end of the cell; the submarginal spots of the forewing above united with one another and the marginal spots into a broad, white-spotted marginal band, but beneath quite free or only connected by the black veins with the marginal spots: the hindwing beneath at the base of the costal margin yellows: the black marginal band of the forewing above projects in cellule 3 strongly and obtusely proximad, and is deeply incised in cellule 4: the forewing beneath at the base white without yellow spot: the hindwing on both sides with large free marginal spots and beneath also with seven large submarginal spots, which show through above or are here only represented by small black dots. — **theora** *Dbl.* (13e). ♂: both wings above and beneath with white ground-colour; the hindwing beneath with sulphur-yellow spots in 1c, at the end of the cell and at the extremities of the interneural folds; the white spots of the marginal band on the upperside of the forewing narrow, streak-like. ♀: forewing with yellow, hindwing with white ground-colour. Ivory Coast to the Congo region.

*theora.* ♀-ab. **concolor** *Auriv.*, both wings as in the ♂ with white ground-colour; Congo region. ♀-ab. **laeta** *Weym.* (= *ratheo* *Suff.*) (15a, on the plate as *ratheo*), both wings with yellows ground-colour; Cameroons and German East Africa. ab. **maculata** *Auriv.* differs in the much enlarged white spots of the marginal band on the forewing above; Congo region. — **lortzingi** *Suff.* (12f) is somewhat smaller than the type-form and is distinguished by having the under surface of the hindwing and the apical part of the forewing beneath cream-yellow; the marginal spots on the under surface are also somewhat smaller than in the type-form. German East Africa and Ruwenzori.

*concolor.*  
*laeta.*  
*maculata.*  
*lortzingi.*

**P. theuszi** *Dew.* (14a). Both wings above and beneath without dark spot at the end of the cell: the submarginal spots of the forewing above are united with one another and the marginal spots into an unspotted black marginal band, which in the ♂ only projects a little proximad in cellule 3 and in the ♀ is fairly uniformly emarginate proximally with thin, long points on the veins; forewing beneath at the base with a yellow spot and before the apex with 3—5 free submarginal spots; hindwing above in the ♂ with medium-sized marginal spots and without submarginal spots, in the ♀ with very large, continuous marginal spots and small submarginal ones; hindwing beneath at the base of the costal margin yellows and in the ♂ also with submarginal spots at least in cellules 1c—3; both wings above and beneath with white ground-colour. Cameroons to the Congo region. ♀-ab. **semialba** *Auriv.* (15b) differs in the white-yellow to ochre-yellow ground-colour of the forewing; Cameroons.

*theuszi.*  
*semialba.*

The last species of the *Calypso*-group are distinguished by the forewing, at least in the ♂, having on both surfaces a continuous black marginal band, proximally little dentate. The hindwing has also on both sides a similar black marginal band or only free black marginal spots at the extremities of the veins. Both sides without distal spot at the end of the cell. In *solilucis*, which in markings forms a transition to the *Pigea* group, the forewing beneath has only marginal spots.

**P. helcida** *Bde.* Both wings above with white ground-colour and on both surfaces with an unspotted, black marginal band 5—6 mm. in breadth; forewing beneath with white ground-colour and fiery red basal spot; hindwing beneath with ochre-yellow (♂) or white (♀) ground-colour and fiery red base to the costal margin; the sexes similar. Madagascar.

*helcida.*

**P. hedyle** has in the ♂ sulphur-yellow ground-colour on both sides of the wings and above black, beneath black-brown marginal bands, which above are always unspotted. — **hedyle** *Cr.* (14b) has the marginal bands of the under surface unspotted, except for a small yellow spot in cellule 8 of the forewing. Sierra Leone to Ashanti. — **rhenia** *Dbl.* The marginal bands of the under surface with a yellow spot in each cellule. Ashanti.

*hedyle.*  
*rhenia.*

**P. ianthe** *Dbl.* The wings above and beneath with sulphur-yellow ground-colour; the forewing on both sides with the black marginal band unspotted; the hindwing above only with 5 large free marginal spots, beneath also with 7 small submarginal spots. Sierra Leone.

*ianthe.*

**P. solilucis** *Btlr.* (14a). ♂: wings on both sides with light sulphur-yellow ground-colour, beneath only with free rounded marginal spots at the extremities of the veins; forewing above with continuous, unspotted marginal band to vein 2 and a free spot on vein 1; hindwing above only with free marginal spots at the extremities of the veins; on the under surface the base of the forewing and of the costal margin of the hindwing are more or less distinctly orange-yellow. ♀ (= **glucki** *Suff.* 15b). Wings thinly scaled, with white or yellowish white ground-colour on both surfaces; the forewing above and beneath with 8 triangular, free black marginal spots at the extremities of veins 1—8; the hindwing on both sides with 7 rounded black marginal spots; beneath the forewing at the base and the hindwing at the base of the costal margin orange-yellow or sulphur-yellow. Cameroons, Congo region and Angola. — **caere** *R. Fldr.* is probably a dry-season form of *solilucis* and differs in the male only in the narrower marginal band of the forewing above and the very small or absent marginal spots on the under surface. Benguela. ♀-ab. **abti** *Suff.* (12d) only differs from the typical ♀ in the darker, sulphur-yellow to ochre-yellow ground-colour of the wings and is probably only a dimorphic ♀ of *solilucis*. Southern Congo.

*solilucis.*  
*caere.*  
*abti.*

## Pigea Group.

This group can scarcely be sharply separated from the preceding. The marginal spots of the upper surface are always free and small or are entirely absent. The submarginal spots of the under surface are as a rule entirely absent in the ♂ and in the ♀ usually occur only on the hindwing and in cellule 3 (1b and 5) of the forewing. The 1st subcostal vein of the forewing is always quite free and the lower discocellular of the hindwing usually somewhat longer than the middle one. The anal claspers of the ♂ have a shorter point than in the species of the *Calypso* group.

**P. cebron** Ward (14b, c). ♂: both wings with light whitish yellow ground-colour, at the base and at the inner margin of the hindwing sulphur-yellow and without spot at the end of the cell, above entirely without submarginal spots, but beneath usually with a rounded, free submarginal spot in cellule 3 of the forewing; forewing above with fine black costal-marginal line and narrow marginal band, at the apex only 2 mm. broad, which gradually becomes narrower posteriorly and terminates at vein 2, beneath with rounded marginal spots, of which only the first 2 are united; hindwing above with rather large, transversely produced marginal spots, and beneath with rounded black ones; the underside of the hindwing bright yellow and the base of the costal margin yolk-yellow. I regard as the ♀ of *cebron* the form figured 14c, which differs from the ♂ in having the forewing orange-yellow with much broader marginal band and distinct marginal spots above also in cellules 1a, 1b and 4; the hindwing has on both sides 4—7 distinct submarginal spots. Cameroons. *cebron.*

**P. dixeyi** Neave. ♂: both wings above white; forewing with thin costal-marginal line and a marginal band 4 mm. in breadth at the apex, reaching to vein 3, as well as small marginal spots at veins 1 and 2 black; hindwing on both surfaces only with 7—8 rounded, or somewhat transverse, black marginal spots; beneath the base of both wings and the costal margin of the hindwing are orange-yellow, the forewing has 7 free black marginal spots and both wings at the distal margin faint yellow streaks between the veins. The ♀ is somewhat larger, 34 mm., the base and costal margin of the forewing above are dark-scaled, the costal region is broader but less black and interrupted by yellowish streaks on the interneural folds. Uganda. *dixeyi.*

**P. capricornus** has in the ♂ above a narrow black marginal band, proximally dentate on the veins, which reaches vein 3, and a black marginal spot at the end of vein 2; the hindwing on both surfaces only with rounded, free, black marginal spots; the forewing beneath only with small punctiform marginal spots; in the ♀ the black markings are much larger, the forewing has on both sides 3 black-grey submarginal spots (in 1b, 3 and 5) and the hindwing 6—7; on the upper surface the cell and the basal part of cellules 1a and 1b are more or less suffused with black-grey. — **capricornus** Ward (14b, c). ♂: both wings above and the forewing beneath with pure white ground-colour; hindwing beneath cream-yellow, at the base of the costal margin usually orange-yellow. ♀: the cell and a broad hindmarginal stripe on the upperside of the forewing, sharply defined, blackish; hindwing above not or but little suffused with grey at the base. Cameroons. — **capricornus.**  
**lindneri** Dew. (14e ♂; ♀ = *falkensteini* 12e) is somewhat smaller; the ♂ differs in having the hindwing white beneath and the ♀ in having both wings above suffused with grey at least to the submarginal spots. In the districts at the estuary of the Congo. — **lindneri.**  
**In nusprica** Suff. both wings in the ♂ have above a somewhat yellowish ground-colour and the hindwing a sulphur-yellow marginal band 1—2.5 mm. in breadth. Cameroons. *nusprica.*

**P. astarte** Btlr. (22b) is in the male very similar to the preceding species and only differs in that the marginal spots on the underside of the forewing are absent and the costal margin of the forewing is less curved, so that the wing is narrower. The ♀ is quite different, having bright orange-yellow wings, tinged with reddish at the base, and marked almost as in the ♂, only differing in the free or almost free marginal spots of the forewing above, a submarginal spot in cellule 3 of the forewing and the punctiform submarginal spots of the hindwing; the marginal spots of the hindwing beneath are distinct, although small; the ♀ strongly recalls the orange-yellow ♀ of *Mylothris agathina*. Tanganyika and British East Africa. *astarte.*

**P. wagneri** Suff. is unknown to me, but probably belongs near *astarte*; described from a ♀ from Mukenge; ground-colour above and beneath white; forewing with a narrow basal stripe and cellule 11 light ochre-yellow; the costal margin very narrowly black; on the extremity of vein 1 is placed a black dot, on 2—8 a black spot each, of which the one on 2 is rounded, whilst the others are narrowly produced along the veins, especially towards the apex, so that, whilst spot 3 measures about 2 mm., those on 7 and 8 extend nearly to the base of cellule 6; the space between them is filled up with light sulphur-yellow; hindwing above at the base very narrowly light ochre-yellow with 7 rounded marginal spots; forewing beneath orange-yellow at the base and at the costal margin to the middle; the apical band is somewhat narrower than above, light yellow and only extending to vein 3, marginal spots free; hindwing at the base of the costal margin orange-yellow; cellules 1c and 7, the cell and the distal half of cellules 3—6 are light yolk-yellow. *wagneri.*

**P. rubrobasalis** differs from the allied forms in that the forewing has beneath a large orange-red or orange-yellow basal spot, which almost reaches the apex of the cell. Both wings without spot at the end of the cell; forewing in the ♀ with a large submarginal spot in cellule 3 and usually also with similar, but less distinct submarginal spots in 1b and 5. — **rubrobasalis** Lanz. Forewing above greenish white, at the base tinged with rose-red, at the distal margin with small, free, streak-like spots at the extremities of the veins; *rubrobasalis*



**P. antsianaka** has an expanse of 60–70 mm. and only occurs on Madagascar. Both wings above with white ground-colour; the hindwing on both surfaces quite unicolorous without markings; the forewing above and below with a black spot at the end of the cell, above with black marginal band or marginal spots and at least in cellule 3 with a large submarginal spot, beneath without a trace of marginal spots, but as *antsianaka*. above with 1–4 submarginal spots and orange-yellow at the base. — **antsianaka** Ward. Marginal band of the forewing above 6 mm. broad at the apex, sometimes almost broken up into large, long spots; forewing on both surfaces with 3–4 free or above almost free submarginal spots (in 3, 5, 6 and 8); both wings beneath with white ground-colour; the orange-yellow basal spot of the forewing extended to the apex of the cell. ab. *persimilis*. **persimilis** Sm. & Kirby only differs from the type-form in having the marginal band on the upperside of the forewing more continuous, not broken up into spots, and the basal spot on the under surface only reaching *lasti*. to the middle of the cell; the forewing with a submarginal spot only in cellule 3. ab. **lasti** Sm. & Kirby only differs from *persimilis* in that the submarginal band of the forewing above is very narrow, only 1 mm. *affinis*. in breadth at the apex. f. **affinis** Mab. is evidently a dry-season form and only differs in the reddish grey colour of the underside of the hindwing and of the apex of the forewing; the submarginal spots of the forewing above are more or less completely united with the broad marginal band.

*ramona* **P. ramona** Smith nearly agrees in size and markings with the preceding species and likewise occurs only on Madagascar. The hindwing on both sides unicolorous without markings, both sides of the forewing with a black spot at the end of the cell; the forewing in the ♂ above with black marginal band, in the ♀ entirely without marginal band or spots, in the ♂ with large submarginal spot in cellule 3. in the ♀ with large submarginal spots in 1b and 3 and smaller ones in 5 and 6; wings in the ♂ with white ground-colour, the forewing in the apical area bright orange-yellow; the yellow colour covers cellules 2–6, 8 and the apex of the cell, beneath the basal part of the cell also is similarly coloured; in the ♀ the forewing is cream-colour and the hindwing light orange-yellow.

*anomala* **P. anomala** Btlr. (15b) is an interesting species, peculiar to the island of Socotra, evidently most nearly allied to *P. antsianaka* and like other species seems to point to a former connection between Socotra and Madagascar. Both wings above white (♂) or grey-white (♀); forewing on both sides with a very large black spot at the end of the cell and with submarginal spots in 1b (sometimes absent in the ♂). 3 (large and quadrate), and in 5, 6, 8, above also with an unspotted black apical band, which terminates at vein 4; hindwing above with a submarginal spot in 5 and 6; beneath the apex of the forewing and the hindwing are brownish white; the submarginal spots of the hindwing are absent or only indicated; in the ♀ the black markings are larger than in the ♂.

#### Daplidice Group.

Of this group the Ethiopian Region possesses only three endemic species. The others belong to the Palearctic Region and have spread from there to the eastern and north-eastern parts of the region. The endemic species only occur in South and East Africa and are completely absent in West and Central Africa. All the species have in common on the forewing a large quadrate black spot at the end of the cell and a white-spotted black apical band formed by the union of the marginal and submarginal spots. The apical band in the ♂ terminates abruptly at vein 3, but in the ♀ is accompanied by a marginal spot on vein 3 and a submarginal spot in cellule 1b. The hindwing has above either only marginal spots (♂) or also a submarginal band, which is united by the veins with the marginal spots, thus enclosing 3–5 large white spots of the ground-colour. The ground-colour of both wings above and beneath white. — In vol. I the Palearctic forms of the group are separated as the genus *Leucochloë*.

*daplidice*. **P. daplidice** L. (vol. I, pl. 21f). The discocellular of the forewing is white and divides the black spot in two parts; the hindwing beneath with numerous large, more or less confluent green or greenish spots and with light yellow or white veins; the white marginal spots of the hindwing beneath proximally widened and transversely truncate, the white spots of the cell and cellule 7 small and irregular. Is reported as occurring in Abyssinia.

*glaucanome*. **P. glaucanome** Klug (vol. I, pl. 20f) only differs from the preceding species in having the white marginal spots on the underside of the hindwing proximally rounded or pointed and the white spots of the cell and cellule 7 large and rounded. Arabia, Soudan, Somaliland and British East Africa; also on the small island *iranica*. of Semba near Socotra. — **iranica** Bien. (vol. I, 20f) is somewhat larger and has only slight greenish markings at the distal margin and in the middle of the hindwing. Found in Arabia at Maskat.

The following purely Ethiopian species are distinguished from the two preceding by the discocellular of the forewing being black and the veins of the hindwing beneath edged with black or black-grey.

*helice*. **P. helice** L. (14f). The hindwing beneath with yellow longitudinal streaks instead of the submarginal spots in all the cellules; the black bordering of veins 2–6 distinctly enlarged before the margin; the spot at the end of the cell of the forewing is not joined to the submarginal spots; the white marginal spot in cellule 4 of the forewing is larger than the marginal spots 3 and 5, and in the ♂ proximally connected with the ground-colour. The larva is above yellow, beneath bluish green, the dorsal line light blue, bordered on each side by a green longitudinal band; the lateral line light yellow; the body with small black tubercles and a few short hairs; head bluish with black dots. Distributed from Cape Colony to *johnstoni*. Damaraland on one side and Natal and the Transvaal on the other. — **johnstoni** Crowl. (15a) only differs in the white marginal spot in cellule 4 of the forewing being scarcely or not at all larger than spots 3 and 5;

the apex of the forewing somewhat sharper, almost rectangular. German and British East Africa. According to Sjöstedt the butterflies fly about like our Garden Whites in the bean-plantations of the natives of the Kilimandjaro.

**P. distorta** *Btlr.* has an expanse of only 33—35 mm. and is thus much smaller than *helice*; the spot *distorta*. at the end of the cell of the forewing is connected by a black streak along vein 4 with the submarginal spot of cellule 3; the hindwing beneath without yellow longitudinal streaks, but with a submarginal line formed of black curves or streaks. British East Africa and Somaliland.

### Brassicæ Group.

Only one species of this group occurs in the Ethiopian Region. The forewing has beneath two large black submarginal spots in 2 and 4, in the ♀ these spots are present also above.

**P. brassicoides** *Guér.* (12f) has the ground-colour white, on the underside of the hindwing cream-*brassicoides*. yellow; the forewing above with broad black marginal band, gradually narrowed posteriorly, and beneath with black veins in the distal area; the hindwing above with triangular black marginal spots at the extremities of the veins, connected by a thin marginal line, and beneath with all the veins edged with black. Only known from Abyssinia.

### 7. Genus: **Euchloe** *Hbn.* (*Phyllocharis* *Schatz.*)

This genus properly belongs to the Palearctic Region. One species, however, is distributed in East Africa as far as Somaliland.

**E. falloui** *All.* (♀=*seitzi* *Röb.*) (vol. I, pl. 22 a). Wings narrow, with white ground-colour; the forewing *falloui*. on both surfaces with a large triangular black spot at the end of the cell, above with a black marginal band and a similar submarginal band, both terminating at vein 4, beneath in the apical part with 4 green transverse stripes at the costal margin; hindwing above unmarked, beneath with 6—7 sharply defined, bright green transverse bands. Somaliland.

### 3. Subfamily: **Teracolinae.**

The precostal vein of the hindwing is always present and curved distad. The lower discocellular of the forewing has its anterior end obliquely directed distad or forms a right angle with vein 6. This subfamily only embraces three Ethiopian genera; among these, however, *Teracolus* with its numerous and elegant species is a great ornament of the dry and open districts of Africa.

### Synopsis of the Genera.

- A. The palpi very short and slender, not visible from above; their last joint vestigial. 8. *Calopieris*.
- B. The palpi of normal length, distinctly visible from above; their terminal joint pointed.
  - a. Only one vein (vein 8) arises from the anterior side of vein 7. 9. *Teracolus*.
  - b. Two veins (veins 8 and 9) arise from the anterior side of vein 7. 10. *Eronia*.

### 8. Genus: **Calopieris** *Auriv.*

This very distinct genus is usually united with *Teracolus*, but is quite different, especially in the structure of the palpi. Antenna short with large, flattened obtuse club. Forewing with 11 veins; the lower discocellular deeply incurved, the middle short, straight and obliquely placed, vein 6 short-stalked. — Only a single species, rare in collections.

**C. eulimene** *Klug* (16a). White; forewing on both surface with large, rounded black spot at the end *eulimene*. of the cell, above with triangular black apical spot, basally somewhat emarginate, posteriorly bounded by vein 3, which encloses 6 red-yellow spots; hindwing above only with small black marginal spots at the extremities of the veins; beneath with all the veins bright orange-yellow, a small black dot at the end of the cell and black submarginal dots; forewing beneath with a broad red stripe along the basal part of the costal margin and orange-yellow veins in the apical part. Nubia.

### 9. Genus: **Teracolus** *Swains.*

The genus *Teracolus* is also represented in North Africa, Palestine, Persia and East India, but has its headquarters in the Ethiopian Region, where the most as well as the largest species occur. The species are evidently very susceptible to external influences and have consequently developed both summer (rainy-season) and winter (dry-season) forms, as well as numerous geographical races. These forms used to be regarded as independent species. In addition the females are often very unlike the males and sometimes polychromatic, and this explains the fact that a number of forms have been named and described which it is not possible to differentiate by tenable characters.



The summer (rainy-season) forms are nearly always distinguished by the stronger black markings on the upper surface and by the white or almost white ground-colour of the underside of the hindwing, which is not dusted with dark. The winter (dry-season) forms on the contrary have the black markings on the upper surface feebly developed or entirely suppressed and may be easily recognized especially by having the underside of the hindwing and of the apex of the forewing more or less dusted with reddish and black. At the end of the seasons transitions between the summer and winter forms often occur.

It is quite natural that in those districts where the rainfall is very great and the climate consequently very humid the summer forms should be more pronounced than where the amount of rain is less. Such forms we call extreme summer forms. From districts where there is no dry season at all (e. g. the Cameroons) only summer forms are known, which thus occur here as local races.

The same naturally applies also to the winter forms. In very dry districts they are better developed than elsewhere and may sometimes occur almost as the only form.

In the males of many species there is at the apex of the forewing above a bright blue, violet, red or yellow spot, which is called the ornamental spot. This spot is usually bordered with black distally and sometimes also proximally. For the rest the reader is referred to part I, vol. I, p. 56.

According to their markings the species may be divided into several groups and subgroups.

### Synopsis of the Groups.

- A. The forewing and sometimes also the hindwing above close to the distal margin between the extremities of the veins with 4 to 8 light marginal spots, which are either small, streak-like or punctiform, or so widened that the dark margin is almost broken up into spots by them. Idmais *Bdv.*
  - \* The forewing of the ♂ in cellule 1b before the middle of the strongly curved vein 1 with a raised vesicular patch of scales, blackish on the under surface; the distal margin ventricose before the middle and hence cellule 1a unusually broad. Faustus Group.
  - \*\* The forewing of the ♂ without bladder-like spot and with the hindmargin straight or almost straight. Amatus Group.
- B. The forewing above without a trace of light marginal spots between the extremities of the veins, the distal margin usually black between the apex and vein 3 or 2 and sometimes to the hinder angle. Evippe Group.

### Faustus Group.

This group only includes a single species, in which the ornamental spot of the forewing is entirely absent. The upper surface is reddish yellow or almost salmon-coloured.

*faustus.*  
*vi.*

**T. faustus** *Olin.* (vol. I, pl. 23c) only occurs in Syria and Persia. — *vi Swinh.* differs from the type-form in having the markings yellow beneath and flies at Aden in South Arabia.

### Amatus Group.

The species of this group are on an average small with broad, obtuse wings. The forewing has usually a transverse row of black discal spots, which may be more or less united with the black marginal band.

*amatus.*  
*calais.*

*carnifer.*  
*crowleyi.*

*flavus.*

**T. amatus** differs from all the following species in having the discal spot in cellule 3 of the forewing placed as near or nearer to the margin than that in cellule 2, which is especially distinct beneath, where the spots are free; the costal margin and a large spot at the end of the cell of the forewing are black; the ground-colour of both wings above red-yellow to white. — The type-form **amatus** *F.* only occurs in South Asia. — **calais** *Cr.* (vol. I, pl. 23d) is distinguished by the large and triangular discal spot in cellule 1b of the forewing; the wings above in the ♂ with red-yellow or salmon-coloured, in the ♀ with red-yellow to white ground-colour; in the ♀ the forewing is often red-yellow at the base and white or whitish distally; the under surface is light greenish. Congo, Angola, East Africa to Nubia and Bornu, South Arabia. f. **carnifer** *Btlr.* has a reddish under surface and is the dry-season form of *calais*. — **crowleyi** *E. Sharpe* (16a) is very similar to *calais* and only differs in the narrower black marginal band of the hindwing above and the smaller submarginal spots, which are better separated from the marginal band; the ♀ is above white or light yellowish (= ab **flavus** *ab. nov.*) (16a). On Madagascar and the adjacent east coast of Africa.

*phisadia.*

**T. phisadia** is distinguished by a very broad black marginal band on the upperside of both wings; this band is unspotted on the hindwing and in cellules 1a—2 of the forewing and projects basad in cellule 3 of the forewing, as discal spot 3 is placed much nearer to the base than discal spot 2; the base and the costal margin of the forewing are broadly darkened at least in the ♂ and at the end of the cell is placed a large black spot; the under surface of the hindwing is almost without markings. — **phisadia** *Godt.* (vol. I, fig. 23 d). Ground-colour of the forewing salmon-coloured in both sexes, or sulphur-yellow to white in the ♀;



the basal part of the hindwing above unicolorous white or in the ♀ sometimes yellowish; expanse only 28 to 32 mm.; base of the forewing above more or less broadly bluish grey; under surface light greenish yellow or in the winter form, f. **arne** *Klug*, more or less reddish. — **rothschildi** *E. Sharpe* (16 b) is larger, 42 to 47 mm., and has the black markings better developed; hence the ground-colour of the forewing only forms a sharply defined transverse band about 5 mm. in breadth; the basal part of the hindwing above is unicolorous white or yellowish; the ♀ is similar to the ♂ or has the ground-colour above white (= ab. **albus** *ab. nov.*) or ochre-yellow (= ab. **ochraceus** *ab. nov.*) (16 b). British East Africa — **ocellatus** *Btlr.* (16 b, c) is very similar to typical *phisadia*, but is at once distinguished by having the basal part of the hindwing above anteriorly salmon-coloured and posteriorly white. Somaliland.

*arne.*  
*rothschildi.*

*albus.*  
*ochraceus.*  
*ocellatus.*

**T. vestalis** *Btlr.* The type-form (vol. IX, pl. 73 c) only occurs in South Asia. — **castalis** *Stgr.* (16 c) is very similar to the whitish ♀♀ of the preceding species, but the pure white ground-colour of the upper surface forms a much broader transverse band on the forewing and the black marginal band on the hindwing above is usually spotted; there is also a white spot on the forewing in cellule 1 b; rarely these white spots in the marginal bands are absent, f. **nigricans** (16 c). British East Africa and Somaliland.

*vestalis.*  
*castalis.*

*nigricans.*

**T. gaudens** *Btlr.* (15 e). Forewing above orange-yellow, hindwing grey-yellow, both with thin black veins and broadly bluish white at the base; the forewing with rather large marginal spots, almost united into a narrow marginal band, and a black discal line, which, however, terminates at vein 3; the hindwing above without discal line and only with very narrow marginal line, under surface light yellowish with indistinct orange-yellow spots or reddish, f. **arenicolens** *Btlr.* Abyssinia and Arabia.

*gaudens.*

*arenicolens.*

**T. chrysonome** *Klug* (vol. I, pl. 23 c) is very similar to the preceding species, but has a complete discal transverse line, reaching to the hindmargin, on the upperside of the forewing and an indication of this transverse line on the hindwing. In the ♀ the ground-colour is lighter, the base not white and the transverse line on the hindwing quite distinct. In the type-form the hindwing is beneath yellowish with reddish spots, but in the dry-season form, f. **helvolus** *Btlr.*, more or less reddish. German East Africa to Somaliland, Nubia, Bornu and Arabia.

*chrysonome.*

*helvolus.*

**T. doubledayi** *Hpff.* (15 d) is larger than the two preceding species and is distinguished by the very broadly black veins on the upperside of the hindwing and the broader, light-spotted marginal band of both wings; the discal line of the hindwing above is indicated, but not so sharply prominent as in the following species. Sierra Leone, Congo region and Angola.

*doubledayi.*

**T. aurigineus** *Btlr.* (15 e) also nearly approaches the preceding three species, but has a brighter ground-colour, sharper black markings and a smaller white basal spot on the forewing, only extending to the middle of the cell; the veins are only narrowly black and the black spot at the end of the cell of the forewing is larger and more rounded; the ground-colour of the hindwing beneath in the type-form is light yellowish, but in the winter form, f. **venustus** *Btlr.* (15 c), reddish. Distributed from Nyassaland to Somaliland and Equatoria.

*aurigineus.*

*venustus.*

**T. ansorgei** *Marsh.* differs from *aurigineus* only in the absence of the white basal spot of the forewing above and is probably only a race of the latter. German East Africa.

*ansorgei.*

**T. vesta**. This variable species has essentially the same markings on the upper surface as *aurigineus*, but is distinguished by having both wings broadly white or whitish at the base, although this is sometimes suffused with black-grey or blue-grey. The discal transverse line on the upperside of the hindwing is always continuous and the marginal band is broad. The black spot at the end of the cell of the forewing is large and above usually joined to the dark costal margin. On the underside of the forewing the ground-colour is bright orange-yellow from the base to the transverse band. The hindwing beneath with three red-brown transverse bands. — In **rhodesinus** *Btlr.* the ground-colour of the upper surface is light ochre-yellow, almost cream-coloured, the black discal band as narrow as in *aurigineus* or somewhat narrower, and the black marginal bands scarcely broader than in that species; the basal area of the hindwing above is light ochre-yellowish next to the discal band and the light submarginal band much broader than the black marginal band. Central Africa at the Meru Lake. — **vesta** *Reiche* (15 e) differs from *rhodesinus* in having the discal band on the hindwing above much broader and the basal area next to it white; the base of both wings above is broadly dusted with blue-grey to blackish and the white colour of the base on the upperside of the forewing is only present in cellules 1 a und 1 b, being entirely suppressed in the apex of the cell by the light reddish yellow ground-colour; the ground-colour of the hindwing beneath is bright yellow. The form was described from Abyssinia; but quite similar specimens occur also in South Africa. — **mutans** *Btlr.* (16 d) closely approaches true *vesta* and only differs in having the ground-colour somewhat lighter and the cell of the forewing above filled up with white to the apex; the ground-colour of the hindwing beneath is sometimes light yellow, sometimes reddish: f. **argillaceus** *Btlr.* (16 c). Distributed from Damaraland and Natal to British East Africa. — **catachrysops** *Btlr.* (16 c, d) is distinguished at once from the other forms of *vesta* by the broad black marginal band of the hindwing and the consequently much reduced light submarginal spots; the ground-colour of the hindwing beneath is bright yellow. German and British East Africa.

*rhodesinus.*

*vesta.*

*mutans.*

*argillaceus.*  
*catachrysops.*



*amelia.* **T. amelia** is perhaps only another race of *vesta*, but always differs in the small, almost punctiform spot at the end of the forewing and in the forewing beneath being light yellowish white from the base to the discal band and only in the cell brighter yellow, sulphur-yellow or orange-yellow. — **amelia** *Luc.* is distinguished especially by having the discal band of the hindwing placed far behind the middle and almost confluent with the marginal band, so that the submarginal spots are very small; the cell of the forewing beneath orange-yellow; the veins of the hindwing beneath not darkened. Senegal to Nubia. — **hanningtoni** *Btlr.* (15 e) has dark veins on the hindwing beneath, sulphur-yellow base to the underside of the forewing and the discal band of the hindwing further removed from the distal margin. British East Africa.

*protomedia.* **T. protomedia** *Klug* (16 e) is a very beautiful, bright sulphur-yellow species, which is rather isolated, but most nearly approaches the preceding. On the upperside of the forewing the veins, a transverse spot at the end of the cell, a thick discal band (which, however, terminates at vein 4) and the light-spotted marginal band black; the hindwing has above only a narrow, yellow-spotted marginal band, but is beneath beautifully ornamented with brown-yellow veins and two yellow-brown transverse bands; the ♀ only differs in having a thicker transverse spot at the end of the cell on the forewing and a dark discal spot at the costal margin of the hindwing. The pupa is light yellow-brown with widely projecting wing-cases and short point to the head. — German and British East Africa, Somaliland, Abyssinia, Nubia and westwards at least to Yola in the Niger region; Arabia.

In the next 4 species the apex of the forewing above is very broadly black and contains at least in the ♂ 2 transverse rows of bright, violet-red iridescent spots, which are separated by the zigzag, black discal transverse line. The proximal row consists in the first 3 species of 4 (—5) short spots in cellules (3) 4—6 and 8, but in *zoë* also of long spots in 1b—3 and in the apex of the cell.

*pholoë.* **T. pholoë** *Wallengr.* is very similar to the following species and only differs in that the hindwing above has only free dark spots instead of the marginal band; the ♀ quite similar to the ♂. Damaraland.

*celimene.* **T. celimene** *Luc.* (16 e, f). Both wings above with white ground-colour, at the base not or but little darkened; the spot at the apex of the cell on the forewing is absent or very small, punctiform; the hindwing above with a continuous, light-spotted, black marginal band, beneath with 3 dark brown transverse lines, of which the first is straight, and with some yellow longitudinal streaks in 1b, 2 and the cell; the veins darkened at least at the distal margin; the cell of the forewing beneath more or less yellow; the ♀ has (always?) small yellow spots in the black apical part of the forewing above and is consequently very dissimilar to the ♂. South and East Africa to Abyssinia. — **sudanicus** *Auriv.* only differs in the broader marginal band of the hindwing above, which is 5 mm. in breadth, and the absence of the first dark transverse line on the hindwing beneath. Soudan.

*praeclarus.* **T. praeclarus** *Btlr.* closely approaches the preceding species, but has the marginal band of the hindwing unspotted, very broad anteriorly, narrowing to a point at the anal angle and irregularly curved proximally, and a large black spot at the end of the cell on the forewing; the ♀ is quite different; above almost the whole apical half of the forewing is black with a transverse row of short, quadrate red spots and red marginal dots, beneath the base of the forewing is broadly red and behind the apex of the cell is placed a broad, bright red, black-spotted transverse band, which is broader at the inner margin; the basal area of the hindwing on both surfaces darkened, yellowish. Somaliland.

*zoë.* **T. zoë** *Grand.* (16 c) has in both sexes a sharply defined blue-grey basal area on the upperside of the forewing; in the ♂ this basal area immediately adjoins the black, red-spotted apical part, in the ♀ there is a white hindmarginal spot in 1a, 1b and 2; the hindwing above white with small punctiform (♂) or larger (♀) marginal spots and in the ♂ yellow at the costal margin, beneath white with a black discal band. This beautiful species only occurs on Madagascar.

Here follow 4 small species with white ground-colour on the upper surface of both wings. The hindwing is entirely without markings or has above only small dark marginal spots at the extremities of the veins and beneath at most some not very distinct discal spots. The forewing in the ♀ with distinct discal spots, which are placed in a curved row.

*venosus.* **T. venosus** *Stgr.* (16 d). Both wings pure white, above narrowly dusted with black-grey at the base; the forewing above with thin, dark marginal line, which is somewhat thickened at the extremities of the veins, and narrowly black veins; the ♀ differs in having on the forewing a curved row of dark discal spots and a broad marginal band. British East Africa.

*halimede.* **T. halimede.** The forewing above at the base with a sharply defined, blue-grey patch, which covers the first three-quarters of the cell and the base of cellules 1a and 1b, at the hindmargin, at least in the ♂, with a large ochre-yellow spot, in the ♂ without, in the ♀ with a black spot at the end of the cell. — **halimede** *Klug* (16 d). The light ochre-yellow hindmarginal spot on the forewing above extends at least to vein 3 and occurs also in the ♀; hindwing above ochre-yellow at the costal margin. Arabia. — **acaste** *Klug* (16 d, e); the light ochre-yellow hindmarginal spot only reaches vein 2 in the ♂ and is entirely absent in the ♀; somewhat smaller than the typical form. German East Africa, British East Africa, Somaliland to Nubia and from there to Senegal.



**T. pleione** is very similar to the preceding species, but has no grey basal spot on the upperside of the forewing; the gold-yellow or light orange-yellow hindmarginal spot of the forewing above almost reaches the base of the cell and also covers the costal margin and the cell of the hindwing, but is sometimes absent in the ♀. — In **pleione** *Klug* (vol. I, pl. 23c) the yellow colour of the forewing in the ♂ covers also the basal part of cellules 4 and 5; in the ♀ the wings above are entirely yellow or white, ab. **tethys** *Röb.* (vol. I, pl. 23c). The larva lives on *Capparis droserifolia* and *Cadaba glandulosa*, is at first brownish and afterwards pea-green. Pupa cream-coloured, spotted with green and with strongly protuberant wing-cases. Arabia. White Nile. The dry-season form **miriam** *Fldr.* (= *chrysomelis* *Btlr.*) occurs together with the type-form. — **heliocaustus** *Btlr.* The yellow colour on the underside of the forewing does not cover cellules 4 and 5, but is anteriorly bounded by vein 3 or 4. Somaliland.

**T. niveus** *Btlr.* (15f) This small, peculiar species only occurs on the island of Socotra and is probably best included in this group. Both wings above white, at the base more or less suffused with blackish; the forewing above at the extremities of veins 4—8 with triangular black marginal spots, which are more or less broadly separated by the white ground-colour, in the ♂ a small orange-yellow spot is placed just proximally to the marginal spots in cellules 4—7, but in the ♀ a transverse row of 4—5 black spots, sometimes such spots are also present in cellules 3—1a, in which the ♀ strongly recalls that of *pleione*; the forewing in the ♂ without dot at the end of the cell, in the ♀ with a small one; the hindwing above in the ♂ without markings, in the ♀ with 3—4 marginal spots and with indications of submarginal spots; the under surface of the ♂ white without markings, that of the ♀ with more or less distinct submarginal spots and median dots. — **candidus** *Btlr.* is a ♂-form in which the marginal spots of the forewing above are entirely absent, so that the apex has only an isolated orange-yellow spot.

The somewhat enigmatical **T. aldabrensis** *Holl.*, which is unknown to me in nature, is perhaps most nearly allied to *niveus*. The ♂ is white with a small black spot at the costal margin shortly before the apex and with the costal margin of the hindwing beneath yellow at the base; the ♀ is also white, but has between the costal margin and vein 3 or 2 on the upperside of the forewing a broad black marginal band, which encloses 5—6 white spots, beneath the hindwing and the apex of the forewing are yellowish. Only found on the small island of Aldabra.

### Evippe group.

The numerous species belonging to this group are nearly always distinguished in the male by a brilliantly coloured ornamental spot at the apex of the forewing above. I divide the species into 12 subgroups according to the character of the ornamental spot.

#### 1. Sub-Group.

The broad black marginal band on the upperside of the forewing reaches the hindmargin in both sexes and is continued along it without interruption to the base; only in a few extreme dry-season forms of the ♀ is it posteriorly broken up into spots and indistinct at the hindmargin; in the ♂ it has no spot at the hinder angle, but in the ♀ there is a large light spot of the ground-colour there. The ornamental spot of the ♂ is violet-black, violet-brown or grey-violet and encloses 5 elongate ochre-yellow spots. Only one species.

**T. eris** has the ground-colour above white, or in the ♀ sometimes sulphur-yellow; the hindwing has above in the ♂ a broad black costal-marginal band, which reaches vein 6, but not the distal margin; in the ♀ this band is wanting; marginal spots are entirely absent or in summer forms may even be quite large. BUTLER specifies 4 local races of this species, which, however, cannot be distinguished, or only by the summer forms of the ♂. — **eris** *Klug* (16f) was described from Nubia and is according to BUTLER the form which is distributed from German East Africa to Somaliland, Abyssinia and Nubia and from there to Senegal. In the ♂ the black median dot of the forewing above and the marginal spots of the hindwing above are absent; the white submarginal spot in cellule 3 of the forewing is very small or absent; the ♀ has usually large marginal spots on the hindwing above and white to white-yellow or bright yellow (f. **abyssinicus** *Btlr.*) ground-colour on the upper surface. ab. **teitensis** is the name given by Miss SHARPE to a form from Teita in British East Africa, in which the light submarginal spot in cellule 3 of the forewing above is larger than in other forms. f. **fatma** *Fldr.* is the dry-season form of the ♀ and differs in that the dark marginal band on the upperside of the forewing only forms a triangular apical spot, which terminates at vein 4 and is then represented by triangular marginal spots on veins 3 and 2 and by small rounded submarginal spots in 1b—3; the dark hindmarginal stripe is absent or only indicated; sometimes also submarginal spots 4—8 are completely separated from the marginal band. — **opalescens** *Btlr.* (16f) is larger than *eris* and distinguished by the broad orange-yellow costal margin and the yellow longitudinal line of cellule 1c on the underside of the hindwing; the marginal spots of the hindwing are large and distinct also in the ♂; in the smaller winter form (f. **punctigera** *Lanz*, as *torrida* 16g) the hindwing is beneath reddish without orange-yellow longitudinal stripes and on both surfaces without marginal spots. Is said to be distributed from Delagoa Bay to Nyassaland and the Victoria Nyanza. — **johnstoni** *Btlr.* is the form which occurs from the eastern part of Cape Colony to Natal, the Transvaal and Manicaland; it agrees almost entirely with the type-form, but is said to be distinguishable by



the presenee in the ♂ also of the small black dot at the end of the cell of the forewing and the larger, white submarginal spot in cellule 3 of the forewing, which, however, does not agree with the specimens before me from Kaffirland; the winter form of the ♀ closely approaches the form *fatma*. — The form distributed from Damaraland to the mouth of the Congo BUTLER calls **maimuna**. It is said to be distinguished chiefly by the dull, smoke-coloured ornamental spot and the feebly developed yellow spots of the ♂; the white submarginal spot of cellule 3 on the forewing is always large and sometimes even proximally united with the ground-colour; the hindwing above with or without marginal spots. If the locality were not known, the ♂♂ appear to me to be scarcely, and the ♀♀ not distinguishable by any tenable characters from the other forms. A closer study of *eris* will without doubt show that it is not possible to find definite characters for the differentiation of local races.

## 2. Sub-Group.

The ornamental spot of the ♂ with bright blue-violet or red-violet reflection. The ♀♀ are very variable, but have always on both sides of the forewing a curved row of 6—7 black submarginal spots, which on the under surface are always free, but above often form a broad submarginal band. This submarginal band is usually more or less completely united with the black marginal band and encloses light spots in cellules 2—8. Sometimes the submarginal spots are small and free above also, but enclosed in a large orange-yellow apical spot (cf. 16 g).

*erone*. **T. erone** Angas (17a). The ornamental spot of the ♂ only consists of 3—4 short spots in cellules 4—6, 8 and is basally so broadly margined with black that the proximal border of spot 4 is as long as or longer than the spot itself. The ground-colour of the upper surface in ♂ and ♀ white or sometimes in the ♀ somewhat yellowish, the under surface of the hindwing and of the apex of the forewing yellowish white or light yellow; the veins of the hindwing are distally finely black and the marginal spots in the ♂ small or medium-sized; in the ♀ very large and contiguous; both wings are above more or less broadly sprinkled with black-grey scales at the base. In the ♀ the black marginal band on the upperside of the forewing is larger than in the ♂, usually reaching the hinder angle; it encloses either 3—4 white spots in cellules 4—6, 8 or a large orange-yellow ornamental spot with 4 black submarginal spots; at the hindmargin in cellule 1b is placed a large black discal spot. — The winter form f. **jobina** Btlr. (16g) is as usual smaller and is distinguished by having the underside of the hindwing and of the apex of the forewing reddish and more or less sprinkled with brown; the black markings of the upper surface are less developed than in the summer form and the ♀ has either a yellow-red ornamental spot or only 4 white spots (ab. **albidus**) in the marginal band of the forewing. *erone* is distributed on the east coast from Natal to Zanzibar and also occurs in German South-West Africa.

*ione*. **T. ione**. The forms of this species are treated by Miss SHARPE as 5 different species; the so-called species, however, intergrade without sharp dividing-lines, so that it is often impossible to decide to which a specimen should be referred. All alike have the ornamental spot of the ♂ of moderate size (in cellule 6 only about 7 mm.) and proximally distinctly bordered with black, consisting of 5—6 spots, of which the last is usually placed in cellule 3, and the one in cellule 4 is never twice as long as broad; the veins on the underside of the hindwing are not or only very finely black. — **ione** Godt. (Lucas) (= *imperator* Btlr.) (17b) is larger than *erone* and *phlegyas*; the distal black bordering of the ornamental spot in the ♂ is but little dusted with grey and the proximal bordering is broad or sometimes quite narrow (= f. **bettoni** Btlr.) Transvaal to Somaliland and Abyssinia, probably also Senegal. In the ♀ the basal area of the forewing above is black and broad, sharply defined distally and usually prolonged distad at the hindmargin, as the figure shows; as in the ♀ of *erone* the broad black subapical band contains either a large orange-yellow ornamental spot or 4—6 light spots. — **phlegyas** Btlr. (= *buxtoni* Btlr., *difficilis* E. Sharpe) (17a) is smaller than the type-form and has the distal bordering of the ornamental spot in the ♂ densely dusted with grey, in the ♀ the base of the forewing is often, but not always (cf. pl. 17a) less densely dusted. — **jalone** Btlr. is the winter form and differs in the more or less reddish and brown streaked under surface; in the ♀ (16g, as *buxtoni*) almost the whole apical spot of the forewing is sometimes orange-yellow. Distributed from Natal through East Africa to Abyssinia and Nubia, also occurring in German South-West Africa. SUFFERT gives the name ♀-ab. **aurivillii** to a female form in which the colour of the red ornamental spot shades of into pure sulphur-yellow distally and reaches the margin between the black marginal spots. German East Africa.

*bacchus*. **T. bacchus** Btlr. (17b) differs from the preceding in that all the veins on the underside of the hindwing in both sexes are black, but otherwise agrees almost entirely with the preceding species; as in this, the ♀ occurs in 2 forms, their ground-colour being sometimes white, sometimes yellow. — In ♀-ab. **hydrophobus** Suff. the red ornamental spot is somewhat larger than usual. German and British East Africa to Equatoria.

*anomalus*. — **anomalus** (17b) is a very peculiar ♀-form, which, however, on account of the black veins of the under surface probably belongs to *bacchus*. — LATHY has figured a very interesting gynandromorph of this species, with the left side female in colour and markings, the right side male.



**T. regina** has in the ♂ a very large ornamental spot, proximally bordered with black, which in cellule 6 is about 12 mm. broad and has in cellule 4 a spot which is more than twice as long as broad; the ♀♀ are distinguished by having in the black marginal band of the forewing above two rows of light spots, of which at least the proximal ones are violet-red or bluish. — **regina** Trim. (15d, 17b, c) is the winter form, with *regina.* slightly reddish unspotted under surface to the hindwing and narrow proximal black bordering to the ornamental spot of the ♂; the hindwing has no marginal spots or only very small ones. Damaraland, Transvaal and from there distributed to British East Africa and Equatoria. The summer form, **anax** Sm. (17c, d), is larger and *anax.* beneath pure white or yellowish; the ornamental spot of the ♂ proximally with broad black border; the hindwing above with large (♀) or medium-sized (♂) marginal spots and beneath with distinct discal spots; the ground-colour of the ♀ is normally white, but may also be yellow, ab. **louisa** Suff. (17c as "*flava*"); the distal *louisa.* spots in the marginal band of the forewing are usually white with or without violet-red scales or sometimes yellow, ab. **flavimacula** (17c). *flavimacula.*

**T. lorti** E. Sharpe (17d, 18a). In this and the following 4 species the ornamental spot of the ♂ is *lori.* entirely without black bordering and hence directly touches the white ground-colour, which sometimes even penetrates between the parts of the spot. In *lori* the ornamental spot is large, in cellule 6 at least 12 mm. in breadth, and continuous; it begins at the costal margin exactly opposite the apex of the cell. In the ♂ the veins of the upper surface are finely black and the hindwing without marginal spot; the ♀ has a yellowish white ornamental spot on the forewing, which is divided by the usual black submarginal spots and is either unicolorous (18a), or sprinkled with small violet-red dots (17d); the under surface in both sexes more or less reddish and in the ♀ with discal spots. Somaliland.

**T. hetaera** Gerst. (17e) differs in the male from the preceding in that the ornamental spot begins at *hetaera.* the costal margin some distance behind the apex of the cell, and from the following species in the ornamental spot extending at least to the middle of cellule 3. The hindwing of the ♂ in the summer form above with marginal spots and beneath with discal spots, in the winter form with no markings on either surface. The ♀♀ have above a very broad black marginal band on both wings; on the forewing it contains only one, often incomplete row of light spots; the ground-colour is white (= ab. **foliaceus** Btlr., 17e) or sulphur-yellow (= ab. *foliaceus.* **sulfureus**, 17e). German and British East Africa. *sulfureus.*

**T. puniceus** Btlr. (18a, b) is very nearly allied to the preceding species and only differs in the male *puniceus.* in having the ornamental spot posteriorly bounded by vein 4 and in the female in the black marginal band of the forewing, which here also encloses only one row of spots, being proximally long-toothed on the veins; in the summer form the black submarginal spots of the forewing are large and completely united with the marginal band, in the winter form, f. **flavescens** (18b), they are better separated or almost free; in the typical *flavescens.* ♀ the light spots of the marginal band on the forewing are scaled with violet-red, in ab. **albomaculatus** (18b) *albomacu-* they are white. German and British East Africa; in the interior to Equatoria. *latus.*

**T. eunoma** Hpff. (18b, c). ♂: marginal band on the upperside of the forewing only about 2 mm. in *eunoma.* breadth and scarcely reaching vein 3; the ornamental spot only composed of two small free spots in cellules 5 and 6; a black spot at the end of the cell; otherwise both wings are entirely without markings, above pure white, beneath slightly yellowish; ♀ unknown. Portuguese South-East Africa. — **flotowi** Suff. (15d) has a *flotowi.* somewhat broader marginal band on the forewing, reaching the hinder angle, and an ornamental spot composed of 4 contiguous spots in cellules 5—8; on both surfaces a black dot at the end of the cell; the wings otherwise white without distinct markings; ♀ unknown. German East Africa. — **chromiferus** Roth. (18b, c) only *chromiferus* differs from the preceding in having the marginal band and the ornamental spot still broader; the hindwing has often small marginal dots above; the ♀ is more or less yellowish white and is distinguished from all the other species of this subgroup by the entirely free submarginal spots of the forewing, which are widely separated from one another and from the marginal band; in cellule 5 and in cellule 6 there is usually a violet-red dot between the marginal band and the submarginal spots; the hindwing has large marginal spots and small submarginal spots, its under surface is yellow. Portuguese South-East Africa.

**T. elgonensis** E. Sharpe (18d) has an expanse of only 45 mm. and is thus smaller than the other *elgonensis.* species of the subgroup; the ground-colour is delicate greenish white (the greenish colour comes out too weakly in the figure) and beneath the apex of the forewing and the hindwing are light yellowish green; the ornamental spot of the ♂ consists only of 3 small spots in cellules 4—6; the hindwing is without markings above, but has beneath a curved row of small submarginal spots; the ♀ is unknown. British East Africa: Mt. Elgon; Nandi; Eldoma Ravine; Ruwenzori. — **glaunigi** A. Schultze is the West African form and differs from *glaunigi.* the East African in "that the red ornamental spot in cellules 5 and 6 is only composed of a slight dusting, which covers two white spots in the black apex; this apex is posteriorly continued as a continuous marginal band, which gradually becomes narrower". Hence the ornamental spot is here enclosed in the black marginal band. North-West Cameroons, in the meadow-land near Bamenda.



## 3. Sub-Group.

The ornamental spot of the ♂ deep red, blood-red to scarlet, sometimes with a slight violet gloss, or rarely ochre-yellow, in this case very large, almost reaching the apex of the cell. Beneath the forewing has black-brown discal spots in 1 b, 3—6 and 8 and the hindwing usually an almost complete, curved transverse row of blackish discal spots. The ♀♀ also have a large ornamental spot, which, however, is somewhat lighter than in the ♂♂ and bears black submarginal spots. Ground-colour of the upper surface in both sexes white or whitish.

*walkeri.* **T. walkeri** Btlr. The ornamental spot of the ♂ is about 8—13 mm. in breadth in cellule 6 and forms also in cellule 2 a larger or smaller spot; its distal black border is continued to the anal angle, its proximal black border is very broad and posteriorly so widened as to cover completely the base of cellules 2 and 3. Benguela and German South-West Africa.

*hildebrandti.* **T. hildebrandti** Stgr. (18c). The ornamental spot of the ♂ is very large, dull ochre-yellow and traversed by lighter spots; the base of both wings above broadly black-grey and distally sharply defined; the hindwing above with broad black marginal band; the wings beneath white or white-grey with discal spots and black streaks at the extremities of the veins; in the ♀ the ground-colour of the upper surface is yellow. German *lanzi.* and British East Africa. — **lanzi** Bart. (18c) is the winter form and differs in having the black markings reduced and the underside of the hindwing and of the apex of the forewing reddish, finely sprinkled with brown. The wings above at the base are not at all or but little grey-scaled, the marginal band of the forewing *blanca.* is broken up into widely separated spots; the ♀ has above a white (= ab. **blanca** Suff.) or yellow (= ab. *clara.* **clara** Suff.) ground-colour. Nyassaland and German East Africa.

*annae.* **T. annae** Wallengr. (18d). The ornamental spot is large and bright carmine; the base of both wings above broadly dusted with light grey; the hindwing above almost always with broad black marginal band, beneath white or yellowish with long black streaks at the extremities of the veins, in the ♀ the ground-colour *sulphurosus* is usually white, rarely sulphur-yellow, = ♀-ab. **sulphurosus** Thur. Distributed from Cape Colony to Damara-*wallengreni.* land in one direction and German East Africa in the other. **wallengreni** Btlr. (18d, e) is the winter form, which is smaller and has the underside of the hindwing and of the apex of the forewing reddish; the base of the upper surface is usually not or but little dark-scaled and the hindwing has only free marginal spots; the pair figured are in this respect a transition to the summer form and show how the forms are connected.

**T. eupompe** occurs in German and British East Africa, Somaliland, Equatoria, Abyssinia, Nubia, along the southern boundary of the Sahara to the Senegal and in Arabia. It appears to be scarcely sharply *pseudacaste.* distinguishable from *annae*, but is on an average somewhat smaller and has a different range. — **pseudacaste** Btlr. (= *phaenius* Btlr., miles Btlr.) is the extreme summer form, which is distinguished by distinct discal spots on the under surface, broader black bordering on the proximal side of the ornamental spot, larger size and larger, sometimes confluent marginal spots on the hindwing; the ♀ has often as large and dark a basal *eupompe.* area on the upper surface as the ♀ of *annae*; the ground-colour of the under surface is white. — **eupompe** Klug (vol. I, pl. 23 c) is the usual summer form and has no discal spots or only indistinct ones on the under surface, narrower black bordering to the ornamental spot and no marginal spots on the hindwing or only small ones; the under surface is white and the basal part of the upper surface not or but little darkened. — *dedecorus.* **dedecorus** Fldr. The underside of the hindwing and of the apex of the forewing reddish; the black markings of the upper surface even more reduced than in *eupompe*.

*guenei.* **T. guenei** Mab. (18c) differs from the other species of the subgroup in that the ornamental spot is much smaller, in cellule 6 only 5—7 mm. broad and posteriorly bounded by vein 3; its distal black bordering is only continued to vein 2; the ♀ has distinct discal spots on the upperside and no proximal black bordering *signa.* to the ornamental spot. The type-form beneath white with distinct discal spots. Madagascar. — **signa** Mab. is smaller, about 35 mm., and has a somewhat yellowish under surface without discal spots. Madagascar.

## 4. Sub-Group.

The ornamental spot is in all lights distinctly reddish yellow (yellow-red to red-yellow). The ornamental spot of the ♂ is large, at the costal margin produced basad, proximally cut off straight or nearly straight and hence usually assumes an almost triangular form; in the summer generation it is narrowly margined with black on all sides, but in the winter form usually entirely without black border proximally; the veins at least in the proximal part of the ornamental spot are not black. The ♀♀ have a distinct black dot at the end of the cell of the forewing and usually a broad black hindmarginal stripe on the forewing and also an angularly interrupted discal band and large (often united) marginal spots on the hindwing.



**T. achine** is larger than the following species; the ornamental spot of the ♂ is also larger, somewhat more pointed and more deeply incised at the extremities of the veins; the ornamental spot of the ♀ consists of two rows of spots, which are separated by the submarginal black lunate band; the proximal row is often only indicated; at least four seasonal forms may be distinguished, which, however, intergrade without any sharp dividing-lines. — **gavisa** Wallengr. (19d ♂, e ♀ as *omphale*) is the extreme summer form, distinguished by a strong development of all the black markings and by the veins on the under surface being black at least distally; in the ♀ the black hindmarginal stripe of the forewing is very broad and covers the greater part of the cell: the discal band of the hindwing is likewise very broad and united with the marginal band; the ground-colour of the under surface in the ♂ is white, in the ♀ more or less yellowish. — **achine** Cr. (19d, e) represents the normal summer form; in the ♂ the ornamental spot is proximally bordered with black and the hindmarginal stripe of the forewing is distinct; the marginal spots of the hindwing are not infrequently free and the under surface is white without black veins; in the ♀♀ the black markings are less developed than in *gavisa*. — **antevippe** Bdv. is intermediate between the summer and winter forms; the ornamental spot of the ♂ is proximally without black bordering, the hindmarginal stripe of the forewing is usually entirely absent, the under surface is, however, white. — **ithonus** Btlr. (15f, 19c,d) is the normal winter form, and is at once distinguished by the reddish, brown-sprinkled under surface; ♂: the ornamental spot usually without proximal black bordering, but distally distinctly margined with black; the forewing usually without black hindmarginal stripe. — **luederitzi** Suff. is merely a transitional form to **simplex** Btlr. (15f), which is the extreme winter form occurring in very dry districts; the ornamental spot of the ♂ is entirely without black bordering proximally and at the costal margin, distally there are only short streaks or spots at the extremities of the veins; the under surface is reddish and minutely irrorated. — The species occurs everywhere on the continent of Africa south of the Sahara except in the West African forest region.

**T. lais** Btlr. (= *halyattes* Btlr.) (19e) is smaller than *achine* and in the ♂ the ornamental spot has a broad proximal border and the under surface is reddish; in the ♀ the inner row of spots of the ornamental patch is entirely absent; the hindmarginal stripe of the forewing is usually not developed. Whether the smaller ♀ figured belongs to this species, as Miss SHARPE indicates, seems to me doubtful. Distributed from Damaraland to Natal.

**T. evanthe** Bdv. (19f). The ornamental spot of the ♂ is distally broad and obtusely rounded, forming an arc smaller than a semicircle; proximally it is black-margined, with yellow scales intermixed with the black colour; hindmarginal stripe of the forewing and marginal spots of the hindwing entirely absent in the ♂. In the ♀ the apical spot of the forewing is unicolorous black or more or less marked with red-yellow spots; hindmarginal stripe of the forewing entirely absent; marginal spots, however, sometimes occur on the hindwing. The under surface is usually tinged and irrorated with red. Madagascar.

**T. evanthides** Holl. (19f) is much smaller than *evanthe* and in both sexes with smaller marginal dots at the extremities of the veins of the hindwing and yellowish under surface; the ornamental spot of the ♀ is large and bordered with black, the ground-colour of the upperside in the ♀ yellowish. Island of Aldabra.

### 5. Sub-Group.

The ornamental spot as in the preceding group is always reddish yellow; that of the ♂ is in the summer forms broadly bordered with black all round and consists of small, short spots, almost separated by the black veins; but in the winter form it is of irregular, not triangular, shape; it is always more or less deeply incised on the proximal side in cellules 3 and 4 and proximally usually distinctly but narrowly margined with black, sometimes, however, entirely without black bordering. In the ♀♀ the black dot at the end of the cell is usually entirely absent or very minute; only in *evippe* and *pallene* is it distinct, but in these, on the other hand, the ornamental spot is absent. When the ornamental spot of the ♀ is present, it is almost always simple (consisting of one row of spots) and proximally broadly bordered with black.

**T. evippe** L. (18e). ♂: ground-colour above and beneath white; ornamental spot with very broad black bordering; forewing without hindmarginal stripe, but usually with median dot; hindwing with large marginal spots, but without transverse band. ♀: apical spot of the forewing large, unicolorous black or with indication of light spots: ab. **ocale** Bdv. (18e); forewing with distinct median dot and with or without hindmarginal stripe; hindwing with marginal spots or marginal band and often also with transverse band. — The only species of *Teracolus* which is indigenous to the forest region of West Africa; it occurs there from Sierra Leone to Angola.

**T. omphale** closely approaches the preceding species. The ♂ is usually distinguished from that of *evippe* by the broad black hindmarginal stripe on the upperside of the forewing; in the winter form, however, this stripe is sometimes entirely absent, but the black bordering of the ornamental spot is there nearly always much narrower than in *evippe* and the under surface of the hindwing reddish and striated with brown. Single specimens, in which the under surface is almost white as in *evippe*-♂ and the black bordering of the



ornamental spot is broader, can, however, scarcely be separated from *erippe* and show that *omphale* is probably only a race of *erippe*. — **omphale** Godt. (18e) is the summer form, with white ground-colour on the under surface; the forewing has a sharply defined black hindmarginal stripe, which also covers the base and the costal margin of the hindwing; the hindwing has a broad black transverse band behind the middle; the proximal black bordering of the ornamental spot is very broad. — **omphaloides** Btlr. is an intermediate form, which only differs from the summer form in having the transverse band of the hindwing absent or reduced and the under surface tinged with reddish. — **theogone** Bdv. (19a) is the winter form and has the under surface reddish, irrorated or clouded with brown; the black transverse band on the upper side of the hindwing in the ♂ is entirely absent and in the ♀ is much less developed than in the summer form: the hindmarginal stripe of the forewing is always narrower than in the summer form and in the ♀ often entirely absent; the ornamental spot of the ♂ is larger, but its black bordering narrower than in the summer form. — **pyrrho-pteris** Btlr. appears to be an extreme winter form: the under surface of the hindwing and of the apex of the forewing is bright rose-red, sprinkled and striated with brown; the upper surface is marked quite as in *theogone*. — The species occurs in the whole of South Africa to Angola and the southern parts of the Congo State, in East Africa, Abyssinia, Arabia and Senegambia.

**T. pallene** is always smaller than the preceding species. In the ♂ the dark transverse band on the upper side of the hindwing is entirely absent and in the ♀ it is curved and parallel with the distal margin: in the summer forms the median dot of the forewing is always distinct. — **pallene** Hopff. (18f, the underside belongs to a ♀, not a ♂) is the winter form, which has a reddish under surface. The hindmarginal stripe of the forewing is completely absent in the ♂ and is only indicated in the ♀; the hindwing above only with free marginal dots; ♀ with black marginal band on the forewing and without ornamental spot; the ornamental spot of the ♂ only narrowly margined with black. — **infumatus** Btlr. (= *wissmanni* Suff.) (18f) is the summer form. It is as usual somewhat larger, above with the black markings better developed and beneath with white to greenish ground-colour; the forewing above with the hindmarginal stripe mediumly broad in the ♂, very broad in the ♀; marginal spots of the hindwing united into a marginal band. Namaqualand, Matabeleland, Zambesi, Nyassaland. — **seineri** Strand, which is unknown to me, seems from the description to be an intermediate form between *pallene* and *infumatus*.

**T. दौरа**. The forms which I here unite under this name are usually regarded as three separate species and were formerly so cited by me also. But in view of the fact that it is impossible to distinguish the winter forms of the three species and that the differences between the summer forms are not important, I now consider it best to regard all the forms as one species. The species is always smaller than *omphale*. In the ♂♂ of the summer form the ornamental spot is broadly margined with black all round, the hindmarginal stripe of the forewing is well developed or at least represented by a spot behind the middle of the hindmargin, the transverse band of the hindwing on the other hand is wanting or is united with the marginal band; the median dot of the forewing is always absent; the ♀♀ of the summer form have often a yellow or yellowish ground-colour and may occur either with or without ornamental spot. In the ♂♂ of the winter form the proximal black bordering of the ornamental spot is completely wanting and the distal bordering is mostly broken up into marginal spots; the hindmarginal stripe of the forewing and the transverse band of the hindwing are entirely absent; the marginal spots of the hindwing are small and free or entirely absent. — **thruppi** Btlr. (19b, c) is the extreme summer form and is distinguished by the broad, deep black, sharply defined hindmarginal stripe of the forewing, which also covers the base of the hindwing, and by the broad marginal band of the hindwing above; the ♀ has usually white, but sometimes also yellow ground-colour (♀-ab. *flavidus* Auriv.). Occurs only in districts where the rainfall is greater, e. g. in Brit. East Africa. — **daura** Klug (19a) is the usual summer form. The hindmarginal stripe of the forewing is narrower, less sharply defined, along the middle often lighter or even indistinct and covering none or but little of the base of the hindwing: the marginal band of the hindwing above is well developed or broken up into spots; the ♀♀ seem always to have a yellow ground-colour, but are very variable as regards the black markings, sometimes the hindmarginal stripe of the forewing and the marginal band of the hindwing are well developed, sometimes the former is absent and the latter represented by free marginal spots, ♀-ab. **flavus** Auriv. (19a). — In Arabia occurs a third summer form, which closely approximates to *daura*; it has been named **yerburei** Swinh. (19c) and is distinguished by the absence of the hindmarginal stripe of the forewing, which is replaced by a black spot in 1b behind the middle, while the greater part of the marginal band of the hindwing is broken up into spots; the ground-colour is white, rarely sulphur-yellow (= ab. **swinhoei** Btlr., 19c). — **evagore** Klug (= *nouna* Luc., *heuglini* Fldr.) (19a, b, c, 20a) is the winter form. The ornamental spot is only slightly reddish and always proximally without black bordering and the narrow distal bordering is often broken up into spots; in the ♂ no other markings are present above or only small submarginal spots on the hindwing; in the ♀♀ the ground-colour is white or reddish white and the black markings on the upper surface are absent or much reduced, the ornamental spot is often divided by a narrow black submarginal band. The under surface is in both sexes reddish or sometimes almost white. — The species occurs in Brit. East Africa, Somaliland,



Abyssinia, Nubia and Arabia. — The larva is above lead-colour with darker dorsal line and orange-yellow lateral line, finely dotted with white all over, below the lateral line there is on each segment a small black, white-dotted protuberance; the head is orange-yellow and the whole body clothed with short, stiff hairs. Pupa light violet-red with purple-red dorsal line and yellow lateral lines.

### 6. Sub-Group.

The ornamental spot is entirely (♂) or almost entirely (♀) without proximal black bordering between the costal margin and vein 4, but in cellule 3 is proximally bordered or has at least at or somewhat before its inner margin a very characteristic black spot on vein 4. The ornamental spot is always red-yellow; in the ♀ it usually consists of two rows of spots, but may also be entirely absent.

**T. antigone** is nearly allied to the last species of the preceding subgroup and like it is very variable, so that it has received no less than about twenty different names. — **antigone** Bdr. (19 h) is the winter form; the underside of the hindwing and of the apex of the forewing reddish, flesh-coloured or rarely almost white and more or less sprinkled with brown; the hindmarginal stripe of the forewing is entirely absent, or nebulous, or even well developed, ab. **galathinus** Btlr.; the marginal spots of the hindwing are absent or are distinct, but free. — **phlegetonia** Bdr. (19 h, 20 a) is the usual summer form; the hindwing is beneath white or white-yellow, not sprinkled; the hindmarginal stripe of the forewing is broad and sharply defined and the marginal spots of the hindwing are large, ab. **xanthus** Swinh. (20 a), or even united into a marginal band. — **emini** Btlr. (20 a) is an extreme summer form with very broad marginal band on the hindwing and a broad hindmarginal stripe on the forewing, often filling up the cell. — The species occurs everywhere on the continent south of the Sahara except in the West African subregion.

**T. metagone** Holl. is unknown to me; according to the description it agrees almost completely with *phlegetonia*; but the hindwing has in the ♂ free triangular marginal spots, which are smaller towards the anal angle, and an indistinct grey nebulous band from the inner margin to vein 3. Probably a form of *antigone* nearly allied to *xanthus*. — British East Africa.

### 7. Sub-Group.

This subgroup differs from the preceding solely in having the ornamental spot of the ♂ ochre-yellow to clay-yellow, without reddish admixture (this colour has unfortunately not been correctly reproduced in the figure). The ground-colour of the under surface is white.

**T. evenina** is the largest species of this group; the ♂♂ have a more or less complete hindmarginal stripe on the forewing above; the ♀♀ have an orange-yellow ornamental spot composed of two rows of spots, but differ from all other ♀♀ of the *Erippe* Group in that the forewing above has a large black or black-grey basal spot, which does not as in other cases run parallel with the hindmargin, forming a stripe, but is directed towards the apex and hence covers the cell (cf. the figure 19 f of *sipylus*-♀); at the apex the basal spot is usually sharply and obliquely emarginate; median dot wanting, but behind the middle of the hindmargin is placed a large, angular black spot. — **sipylus** Swinh. (19 f) is the extreme summer form; it is distinguished by its larger size, the very broad proximal black bordering of the ornamental spot of the ♂ and the black marginal band or large black marginal spots on the upperside of the hindwing. — The normal summer form is **evenina** Wallengr. (19 g); the ground-colour of the under surface is white; the ornamental spot of the ♂ proximally bordered with black; the marginal spots of the hindwing are small or absent. — **casta** Gerst. (19 g) is intermediate between the summer and winter forms; the ornamental spot of the ♂ has no proximal black bordering, but the under surface is white and the marginal spots of the hindwing are distinct. — **deidamioides** Auriv. (15 f) is the winter form; the ornamental spot of the ♂ has no proximal and only very narrow distal bordering; the hindmarginal stripe of the forewing in the ♂ is absent or very short; the hindwing without marginal dots; the under surface always reddish and more or less sprinkled. — The species is distributed from Cape Colony on one side to South Angola, on the other to Somaliland. — **xantholeucus** E. Sharpe, from Kavirondo, which is unknown to me in nature, is probably only a form of *evenina*.

**T. ephyia** Klug (19 g). The wings above with white ground-colour and very slight sulphur-yellow tinge, at the base not or but very little black-scaled; the large black-grey basal area on the upperside of the forewing, which occurs in the ♀ of *evenina*, is entirely absent in that of *ephyia*; the forewing nearly always with small black median dot; the ornamental spot is undivided in the ♀ also, reaches at most to vein 3, is distally narrowly, proximally broadly (summer form) or narrowly bordered with black. Only known with certainty from Nubia.

**T. liagore** Klug (19 a) is a very rare form only known from Nubia, which BUTLER sometimes refers to *evarne*, sometimes to *daira*; it appears, however, to be most nearly allied to *ephyia* and may even be an extreme dry-season form of this species. The wings above pure white to the base; the ornamental spot reaches vein 2, is proximally entirely without black bordering and distally only with very thin and short



black streaks at the extremities of the veins; the forewing without median dot; the wings beneath snow-white, the apical third of the forewing a beautiful sulphur-yellow with five free orange-yellow spots at its proximal margin. The specimen figured differs from the type in having black marginal dots on the forewing and a somewhat smaller ornamental spot.

### 8. Sub-Group.

The ornamental spot of the ♂ is sand-yellow (light ochre-yellowish) and is complete to the apex and the distal margin or is distally only irregularly dusted with (black-) grey without black streaks or dots at the extremities of the veins. In the ♀♀ the ornamental spot is dull dark brown with a transverse row of ochre-yellow spots. Ground-colour of both wings white. The forewing in the ♂ without, in the ♀ with median dot.

*agoye*. **T. agoye** *Wallengr.* (15 f) has the veins on the upper surface thinly but distinctly black and the proximal bordering of the ornamental spot little thick or indistinct; the under surface is pure white or only slightly yellowish, Damaraland to the Transvaal. — In *bowkeri* *Trim.* (15 f) the veins on the upper surface are not black and the proximal black bordering of the ornamental spot is very thick; the underside of the hindwing yellowish or reddish. Damaraland, Namaqualand, Griqualand and Basutoland. — **zephyrus** *Marsh.* only differs from *agoye* in that the veins are not black, the costal margin of the forewing is narrowly black and the ground-colour of the forewing is suffused with sulphur-yellow on the proximal side of the ornamental spot. Somaliland.

### 9. Sub-Group.

The species of this subgroup are distinguished by the bright lemon-yellow, sulphur-yellow, rarely almost white ground-colour of both wings; in the latter case, however, the ornamental spot is distinctly bordered with sulphur-yellow proximally. The ornamental spot is large, orange-yellow, proximally usually without black bordering and reaching vein 2, sometimes even vein 1. In the ♂♂ the median dot of the forewing is wanting. The ♀♀ are distinguished by a large black spot at the end of the cell on the forewing, and by 1—5 (6) black discal spots on the forewing being free, but connected with one another; the ornamental spot is smaller than in the ♂ and distally usually bounded by a broad black marginal band. The species are very nearly allied *inter se*.

*evarne*. **T. evarne.** The forewing with the apex obtusely rounded; the ornamental spot is of moderate size and does not reach the apex of the cell; the hindwing above white or slightly yellowish. — **evarne** *Klug* (20 b) is the summer form with the hindwing beneath white or yellowish white and a distinct distal black border to the ornamental spot in the ♂; the marginal spots of the hindwing are always present and in the ♀ very large. In the winter form, f. **citreus** *Btlr.* (= *syrtinus* *Btlr.*) (20 d, e) the hindwing is beneath reddish and the distal black border of the ornamental spot is very narrow or entirely absent; the marginal dots of the hindwing are wanting. The whole of East Africa to Nyassaland. — **philippsi** *Btlr.* (20 b, c) is a somewhat smaller race occurring in Somaliland, in the summer form of which the marginal dots of the hindwing in the ♂ are entirely absent and in the ♀ much smaller than in *evarne*; the winter form, **sharpei** *Auriv.* (20 c), is still smaller, has the hindwing reddish beneath and the distal border of the ornamental spot broken up into isolated dots.

*dissociatus*. **T. dissociatus** *Btlr.* (20 d, e) has like the preceding species a moderately large ornamental spot, which does not reach the cell; the apex of the forewing, however, projects almost as distinctly as in the following species and the expanse is greater than in *evarne*; both wings have an almost white ground-colour; the ornamental spot of the ♂ in the summer form is usually proximally finely, distally thickly bordered with black; in the winter form the hindwing is reddish beneath and the black bordering of the ornamental spot is feebly developed or entirely absent. From Nyassaland to the Kilimandjaro and Victoria Nyanza.

*au-ro*. **T. auxo** has the apex of the forewing rather strongly produced and a large ornamental spot reaching the cell; both wings with yellow ground-colour. — **auxo** *Luc.* (20 c) is the larger summer form; the ground-colour is bright sulphur-yellow; the ornamental spot is at least distally distinctly bordered with black and the under surface of the hindwing is yellow. — **topha** *Wallengr.* (20 d) is the winter form; it is smaller, has the ground-colour lighter, the ornamental spot not bordered with black on either side and the under surface of the hindwing reddish, sprinkled with brown. The species occurs in South Africa to Matabeleland. Larva unicolorous green with a narrow yellow lateral line on segments 4—12; lives on a Capparideae. Pupa with very long point to the head; its colour varies from reddish brown to light green. — **incretus** *Btlr.* (20 e) is the East African race of *auxo* and occurs from Nyassaland to Uganda; it is somewhat larger and has an even larger ornamental spot, which is without proximal black bordering. ab. **vulneratus** *Stgr.* (20 f) is only a casual aberration with irregular ornamental spot and orange-red marginal band on the hindwing. ♀-ab. **panganiensis** *Thur.* differs from normal *incretus*-♀ in the white ground-colour of both wings.

### 10. Sub-Group.

The under surface of the hindwing and of the apex of the forewing has a fine and rather dense brown or grey transverse striation; the hindwing beneath with a dark longitudinal streak from the base through the cell almost to the distal margin. The apex of the forewing is sharp, almost rectangular.



**T. subfasciatus** Swains. (20f) The wings in both sexes with sulphur-yellow ground-colour; the ornamental spot in the ♂ little if at all darker than the ground-colour, in the ♀ orange-yellow to orange-red, posteriorly open or only bounded by vein 4, but proximally bordered between the costal margin and vein 4 by a broad, deep black half-band; distally the ornamental spot has a very broad black-brown border; forewing with black median dot; hindwing without markings. Distributed from South Angola and Damaraland to Nyassaland, German East Africa and Uganda. *subfasciatus.*

**T. ducissa.** The ornamental spot very large, bright orange-yellow, proximally without bordering, distally broadly edged with black or brown, the wings above in the ♂ with yellow, in the ♀ with white ground-colour; forewing with black spot at the end of the cell. **ducissa** Dogn. is the dry-season form and is distinguished by having the underside of the hindwing and of the apex of the forewing almost flesh-coloured, with a strong tendency to ochre-brown. f. **sulfuratus** Karsch (20f, g) has the under surface of the hindwing dull yellowish white and the distal border of the ornamental spot deep black; in cellule 3 and in cellule 4 is placed a black discal dot. German East Africa. *ducissa.* *sulfuratus.*

To this subgroup probably belongs also **T. schuberti** Suff. (14d), which is unknown to me in nature. "Ground-colour of the upper surface white; the basal area of the forewing for a distance of 10—12 mm. light sulphur-yellow, slightly variegated with black scales; the ornamental spot rather large, in cellule 6 about 7 mm broad, of iridescent rose-red-violet colour and margined with brilliant orange-brown-red, which colouring is extended anteriorly to the costal margin, changes gradually into cinnamon-brown at the distal margin and reaches to the middle of cellule 2; proximally the ornamental spot is margined with light sulphur-yellow irrorated with black scales; this colour gradually changes into the white ground-colour; on the lower discocellular is placed a black dot. Forewing beneath whitish, at the base light sulphur-yellow almost to the middle of the cell, at the apex clay-yellow-reddish with a small diffuse submarginal spot in each of cellules 2—6 and 8; under surface of the hindwing light clay-coloured reddish with small light brownish streaks and specks; from the costal margin near the end of vein 8 a straight darker transverse band extends nearly to vein 4." German East Africa. Only a single ♀ is as yet known. *schuberti.*

## II. Sub-Group.

The single species of this group was formerly regarded as an *Eronia*, but it is a true *Teracolus*, differing, however, from all the other species in that the lower and middle discocellulars of the forewing form a uniform curve. The sulphur-yellow ornamental spot of the ♂ is very large, completely covering cellules 3—10 as well as the apex of the cell and being posteriorly bounded by vein 3. The apex of the forewing is sharp, almost rectangular and its distal margin straight.

**T. lucasi** Grandid. (21a), In the ♂ the ground-colour of both wings is white; the hindwing is without markings above, but beneath yellow and more or less spotted and sprinkled with brown; the forewing is above margined with black at the apex and at the distal margin to vein 3, beneath it has a black spot at the end of the cell, and the apex is coloured and marked like the hindwing. In the ♀♀ the apex of the forewing is still sharper and the ground-colour of the upper surface sometimes more or less yellowish, sometimes pure white; the black marginal band of the forewing above is broader than in the ♂ and proximally accompanied by 2—4 submarginal spots in cellules 3—6, the median spot of the forewing is larger than in the ♂ and well developed above also; the hindwing above with large marginal spots and smaller submarginal spots in 2—7; the under surface is coloured and marked as in the ♂. Madagascar. *lucasi.*

## 12. Sub-Group.

The forewing has above a broad black apical band, which begins somewhat behind the middle of the costal margin and terminates in the ♂ at vein 2, but in the ♀ reaches the hinder angle. The forewing on both surfaces with black discal dot, but entirely without ornamental spot. The ground-colour above in the ♂ lemon-yellow, in the ♀ white. The hindwing in the ♂ above without markings, in the ♀ with broad black marginal band. On the under surface of the forewing there is in the ♀ a broad black submarginal band, which in the ♂ is absent or only indicated. The only species belonging here comes from Madagascar.

**T. mananhari** Ward (20g) is larger and has the hindwing beneath sulphur-yellow to ochre-yellow without longitudinal streak. ab. **nothus** Mab. (20g) is smaller than the type-form and only differs in having a brown longitudinal streak on the under surface of the hindwing. f. **flavidus** Mab. is the winter form and is distinguished by the yellow-brown to red-brown underside of the hindwing and of the apex of the forewing. *mananhari.* *nothus.* *flavidus.*

## 10. Genus: **Eronia** Bdv.

*Eronia* only differs essentially from *Teracolus* in that veins 8 and 9 of the forewing arise from vein 7 beyond the middle and that the club of the antenna is longer and less swollen. The species are on an average larger than those of *Teracolus* and differ much among themselves. The Ethiopian species also differ



very considerably from the Indo-Malayan (*Pareronia*) in colour and shape. The ♀♀ in most species are marked very differently from the ♂♂. The species of *Eronia* have a powerful and very rapid flight and are hence difficult to catch except when they are met with drinking at flowers.

- E. cleodora.** Both wings above white with a broad black marginal band, which is irregularly incised proximally; at the apex of the forewing the marginal band encloses two white spots; the forewing is also white beneath, but its marginal band at the apex grey and brown and only proximally pure black; the hindwing is beneath bright yellow with brown, grey-spotted marginal band and some brown discal spots, of which one at the middle of the costal margin is always present. The sexes are similar. — **cleodora** Hbn. (21 b) is the dry-season form; it is smaller and the marginal band of the hindwing is only 1—3 mm. broad. f. **erxia** Hew. (21 b, c) has the marginal band on the hindwing 5—8 mm. in breadth and the underside of the hindwing is paler. f. **dilatata** Btlr. (21 e, f) is a large, extreme summer form, in which the marginal band of the hindwing is 10—12 mm. in breadth. — The species occurs in South Africa to Angola and in the whole of East Africa to Abyssinia. The larva has been found on *Capparis zepheri* and is green with red-yellow lateral line.
- E. leda.** **E. leda** Bdv. (21 e) strongly recalls *Teracolus incretus* in the ♂, but is larger; the wings in the ♂ are above sulphur-yellow; the forewing has a large orange-yellow ornamental spot, which reaches the cell and is distally narrowly margined with black-brown; the underside of the hindwing and of the extreme apex of the forewing is more or less spotted with brown; in the ♀ the ornamental spot of the forewing is absent and is replaced by a broader black or brown marginal band, posteriorly broken up into spots, the ground-colour is either yellow as in the ♂ or white, ♀-ab. **cygnophila** Suff. (15 c). During the dry season occurs a smaller form, f. **trimeni** Oberth., in which the dark markings on the forewing above are almost entirely absent and the underside of the hindwing is more spotted with brown. Distributed from Kaffirland to Abyssinia.
- E. pharis.** **E. pharis** Bdv. (21 c) differs from the other species in the more obtuse and rounded forewing; both wings with white ground-colour; the forewing above with narrow black apical band, which terminates at vein 3 or 4; hindwing above unicolorous without markings; forewing beneath white with a small brown subapical spot (♂) or a brownish marginal band (♀); hindwing beneath light yellowish, in the ♂ only with a black streak at the end of the cell and oblique brown streaks in cellules 5 and 6, in the ♀ with broad grey-brown marginal band. A rare species, only occurring in the great West African forest region, but distributed from Sierra Leone to Angola and Uganda.
- E. thalassina.** **E. thalassina** Bdv. (15 c, 21 e) differs from all the other species in that the hindwing and the apex of the forewing have beneath a bright mother-of-pearl gloss; the forewing beneath without markings or only with small black marginal dots at the extremities of the veins and 1 or 2 black submarginal spots (in 3 and 5); the hindwing beneath without spot on the transverse vein of the cell, but often with small dark submarginal dots and yellow base to the costal margin; in the ♂ the wings above are a beautiful bluish white, the forewing has a broad black marginal band, irregularly incised proximally, which usually reaches the hinder angle, the hindwing is without markings or has usually black marginal dots at the extremities of the veins; in the type-form of the ♀ both wings are above white or whitish, in ♀-ab. **verulana** Ward the forewing is on both surfaces ochre-yellow to orange-yellow and the hindwing white, in ♀-ab. **sinalata** Suff. (15 c) the forewing is white but the hindwing ochre-yellow; in the ♀ the black marginal band of the forewing has usually 2 light spots before the apex. — Distributed from the Senegal to the Zambesi and British East Africa.
- E. argia.** **E. argia** is the largest of the African Pierids. It differs from the preceding species in the dull cream-yellow under surface of the hindwing without mother-of-pearl gloss and in the underside of the forewing, which has in the ♂ a large black subapical spot and in the ♀ a dark marginal band. In the ♂ the wings are above slightly greenish or bluish white, the hindwing without markings and the forewing adorned with a black marginal band, proximally uniformly dentate at the veins. In the ♀ this marginal band is in cellules 2 and 4 deeply incised or even broken up into spots and the hindwing has large marginal spots at the extremities of the veins. The ♀♀ occur moreover in many colour-aberrations. — **argia** F. (21 c d) is the West African race; the ♂♂ have a broader marginal band on the forewing above, continuous to vein 2, and in the ♀♀ this marginal band is deep black, unspotted and continuous; in the main form of the ♀ both wings are white above to the base and the forewing also beneath without basal spot. West Africa from Sierra Leone to Angola and Uganda. ♀-ab. **semiflava** Auriv. has above orange-yellow forewing without basal spot and white hindwing. ♀-ab. **idotea** Bdv. (21 d): both wings above sulphur-yellow; the forewing without basal spot. ♀-ab. **poppea** Don. (21 d); both wings above white; the forewing with orange-yellow basal spot. ♀-ab. **mixta** Auriv.; the forewing above yellow with orange-yellow basal spot; the hindwing above white. ♀-ab. **virescens** Suff.; both wings above light greenish-yellow; the forewing above without, beneath with orange-yellow basal spot; Togo. In ♀-ab. **sulphurea** Auriv. both wings above are sulphur-yellow; the forewing with orange-yellow



basal spot on both surfaces. — **varia** Trim. is the form occurring in South and East Africa. The ♂♂ are distinguished by the somewhat narrower black marginal band of the forewing, which is continuous at most to vein 3 and is often broken up into spots at veins 3 and 4; in the ♀♀ this marginal band is spotted with white or even broken up into marginal and submarginal spots. ♀-ab. **aurora** Suff. (15 c) has both wings above white; the forewing on both surfaces with orange-yellow basal spot; the submarginal spots of the forewing above almost free or absent; Natal, Mozambique. ♀-ab. **mhondana** Suff. (21 d); both wings above white; the forewing only beneath with orange-red basal spot. German West Africa. In ♀-ab. **giara** Suff. the forewing is above white without basal spot, beneath with orange-red basal spot, the hindwing above light ochre-yellow; East Africa.

**E. usambara** Auriv. is very similar to the ♂ of the preceding species, but has an expanse of only 45 mm. The wings are white above, the hindwing without markings, but the forewing with a black marginal band, which is continuous to vein 3 and is proximally less dentate at the veins than in *argia*-♂; forewing beneath white and as above with a blackish marginal band, which is only yellowish at the margin itself; the hindwing is beneath cream-yellow with a rounded brownish submarginal spot in cellule 5. From Usambara in German East Africa. The ♀ is unknown to me.

**E. buqueti** differs from all the other species in that the underside of the hindwing and that of the apex of the forewing are watered with small, fine brown striae, and that the hindwing has beneath a small brown ring-spot and a white streak at the end of the cell. Hence the under surface strongly recalls that of the *Catopsiliae*. The ground-colour of both wings is white, on the underside of the hindwing tinged with greenish. The species occurs in South Africa to Angola, in the whole of East Africa, on the Senegal, in South Africa and on Madagascar, but is wanting in the West African forest region. — In **buqueti** Bdv. (21 c) the forewing has above a broad black marginal band, which reaches the hinder angle and is continued at the costal margin to the base; this band is broader in the ♀ than in the ♂; the hindwing is usually without markings, but has sometimes especially in the ♀ 4—5 dark marginal spots; the brown streaks of the under surface are indistinct. ab. **mossambicensis** Hpff. only differs from the type-form in the distinctly striated under surface. f. **arabica** Hpff. is a dry-season form, in which the apical band of the forewing above is narrower, only reaches vein 3 and is not continued along the costal margin; the under surface is strongly striated. f. **capensis** Hpff. is the extreme dry-season form and only differs from *arabica* in having the apical band of the forewing entirely or almost entirely absent.

#### 4. Subfamily: Coliadinæ.

This subfamily is easy to recognize by the characters given on p. 30. The forewing always with only 11 veins. In proportion to the numerous forms of other parts of the world it is but poorly represented in Africa.

#### Synopsis of the Genera.

- A. The hindwing with distinct, basally curved precostal vein. Veins 9 and 10 of the forewing free from the anterior margin of the cell, 7 in the distal margin. 11. *Catopsilia*.
- B. The hindwing without precostal vein.
  - a) Veins 9 and 10 of the forewing free from the anterior margin of the cell; vein 7 in the apex or in the costal margin. 12. *Terias*.
  - b) Vein 9 of the forewing arises behind the apex of the cell from the stalk of 6, 7 and 8. 13. *Colias*.

#### 11. Genus: **Catopsilia** Hbn.

Large species with broad wings. The forewing has an almost straight distal margin and rather sharp apex. The distal margin of the hindwing is uniformly rounded. The ♂♂ of the Ethiopian species all have a mealy spot in cellule 7 on the hindwing above and a long hair-pencil on the hindwing beneath close to the hindmargin. The ♀♀ are usually different from the ♂♂ in colour and markings. — The larvae are gregarious and live on species of *Cassia*, are somewhat spindle-shaped and have the surface finely granulated. Pupa with sharp point to the head and ventricose wing-cases.

**C. florella** F. (vol. I, pl. 23 g). The ♂ is above white, with mealy scales at the base of the wings; a black dot at the end of the cell of the forewing and sometimes also of the hindwing, otherwise the wings are without markings above or only with some small dark spots at the apex and at the distal margin of the forewing; the under surface of the hindwing and of the apex and costal margin of the forewing is greenish and sprinkled with small, thin dark striae. The ♀ (= *rufosparsa* Auriv., 21 a) has a greenish yellow ground-colour to both wings; the forewing has red-brown spots at the apex and distal margin and a larger, brown median spot, also the hindwing has usually red-brown marginal spots; beneath both wings are sprinkled with red-brown. ♀-ab. **hyblaea** Bdv. has lighter, white-yellow wings above. In ♀-ab. **aleurona** Btlr. the wings are above almost white at the base and in the middle, only at the distal margin broadly yellowish. In ♀-ab. **pyrene**



*Swains.* the wings are white above and hence almost entirely similar to the ♂, only differing in the dark costal margin and the somewhat larger marginal spots of the forewing. The species is common everywhere throughout the region.

*thauruma.* **C. thauruma** *Reak.* (21a). ♂: the wings above white, broadly sulphur-yellow at the base; the forewing with a black spot at the end of the cell; under surface slightly reddish white. In the ♀ both wings are above yellowish white in the basal area, broadly light ochre-yellowish at the distal margin; the forewing with large median spot, free red-brown submarginal and marginal spots; under surface orange-yellow with brown median spots. Madagascar.

*grandidieri.* **C. grandidieri** *Mab.* is very similar to the preceding species and probably only its rainy-season form. The ♂ only differs in having the spot at the end of the cell on the forewing absent or very small. The ♀ has white ground-colour, a black marginal band on the forewing, which is continuous to the hinder angle. black costal margin to the forewing, free black submarginal spots on both wings, as well as dark marginal spots on the hindwing. Madagascar.

## 12. Genus: **Terias** *Swains.*

The species of *Terias* are small, bright yellow to almost white Pierids, and occur commonly in all the tropical and subtropical countries. Like the *Teracolus*-species they are very susceptible to climatic conditions and develop pronounced seasonal forms. In the summer forms the dark markings on the upper surface are better developed, but the under surface is white or yellow and almost without markings. The winter forms on the contrary have the dark markings on the upperside less developed and the under surface spotted with black or brown and often reddish.

The Ethiopian Region produces only a few species, which, however, are among the most conspicuous of the Pierids owing to their great abundance and bright colouring. They are mimicked by species of the Lycaenid genera *Teriomima* and *Liptena*. The distal margin of the hindwing in the African species is uniformly curved or only very feebly angled between veins 3 and 4. Veins 6 and 7 of the hindwing arise from the same point or only very little separated. The sexes usually differ in the ground-colour of the ♀♀ being lighter, more whitish. — The larvae are cylindrical, with very short, fine hairs. The pupa is elongated, pointed at both ends and has the wing-cases strongly ventricose. For further particulars concerning the genus cf. vol. I. p. 58, pl. 23; vol. V. p. 80, 106, pl. 24; vol. IX, p. 165, pl. 73.

The African species belong to two groups, which, however, can only be sharply differentiated in the male.

### Hecabe Group.

In the ♂ the median of the forewing is accompanied at its base on both sides as far as vein 2 by a narrow streak of modified scales. These streaks stand out darkly when the wing is held up against the light. The forewing above with a complete, continuous black marginal band reaching the hinder angle, and proximally dentate at least on vein 4 or 5.

*brenda.* **T. brenda** *Dbl. & Hew.* (22c). The black marginal band of the forewing above projects the furthest proximad at vein 4, is deeply excised between veins 2 and 4 and usually projects sharply proximad again at vein 2. The wings in the ♂ sulphur-yellow, in the ♀ white-yellow to almost white, the hindwing above with marginal dots, which are sometimes united into a narrow marginal band, the under surface without markings or only with indistinct grey spots on the hindwing. — **maculata** *Auriv.* (22c) is the winter form and is distinguished by a large brown apical spot on the underside of the forewing and by distinct markings on that of the hindwing. — This is the largest of the Ethiopian species, having an expanse of 40–50 mm., and occurs in the whole West African forest region to Uganda and in Portuguese East Africa.

*senegalensis.* **T. senegalensis** *Bdr.* (22c) has the marginal band of the forewing formed exactly as in the preceding species, but is smaller, 27–40 mm., and has the ground-colour in the ♂ darker, gold-yellow or ochre-yellowish, in the ♀ light yellow or whitish; the wings are beneath more or less without markings. In the winter form, **bisinuata** *Bthr.* (22d), the forewing has beneath a dark brown subapical spot and the hindwing distinct brown spots. This species is scarcely different from the Asiatic *T. hecabe* and occurs commonly in the whole Ethiopian Region. — **anjuana** *Bthr.* occurs on the Comoro Island Johanna, has a light ground-colour and according to BUTLER is similar to the following species, but has a broader marginal band on the forewing and is smaller.

*floricola.* **T. floricola** *Bdr.* (22d). The black marginal band of the forewing above projects furthest proximad on vein 5 or on the fold between veins 4 and 5, but usually only obtusely and slightly, and is then between vein 4 and the hinder angle quite narrow and of uniform breadth, often entirely without a trace of teeth; the ground-colour in the ♂ bright yellow, in the ♀ lighter; the under surface almost without markings, the hindwing above with small marginal dots or rarely with narrow marginal band. The winter form, **ceres** *Bthr.* (22d), has a lighter ground-colour above, on the underside of the forewing a brown subapical spot and on the hindwing distinct brown spots.

### Brigitta Group.

The forewing in the ♂ without scale-streak at the base of the median. The marginal band of the forewing is either incomplete, not reaching the hinder angle, or, if complete, uniformly curved on the proximal side, without incisions.



**T. hapale** Mab. (22d) has a short marginal band on the forewing, which at most reaches vein 2, usually only vein 3, but at vein 4 projects far proximad; the ground-colour of both wings is yellowish white or pure white (♀) and the under surface is more or less spotted with brown. A very rare species, but occurring both in West and East Africa and on Madagascar.

**T. desjardinsi** differs from the preceding species in the yellow ground-colour and from all the other African species in that the distal margin of the hindwing is feebly angled at vein 3 or between 3 and 4; the wings, especially the forewing, are broader and more rounded than in the following species. The ground-colour of the wing is bright yellow in the ♂, lighter yellow in the ♀. — **desjardinsi** Bdv. (22e) is the normal summer form; the black marginal band of the upper surface is about 3 mm. in breadth on the forewing and on the hindmargin continued narrowly to the base, on the hindwing it is only about 1 mm. in breadth or broken up into spots; the under surface of the forewing is bright yellow without spots and that of the hindwing only ornamented with the usual dark grey markings. — **regularis** Btlr. (22e) is an extreme summer form, which agrees with *desjardinsi* on the under surface, but differs from it in that the marginal band on the upperside is much broader (on the forewing 5—6 mm. in breadth, on the hindwing 2—3 mm.) — **marshalli** Btlr. (22e) is the winter form; the forewing is beneath at the apex and sometimes also at the distal margin more or less rust-brown or reddish and has usually also a brown subapical spot; the spots on the underside of the hindwing are also more or less reddish; the submarginal bands of the upper surface usually developed as in *desjardinsi*. ab. **aliena** Btlr. is an aberration of the winter form in which the marginal band of the forewing above is reduced to a short reddish brown apical band only 1—2 mm. in breadth and scarcely reaching vein 3; the hindwing is entirely without markings. — **mandarinula** Holl. (22e) is an extreme winter form. in which the marginal band of the forewing is broken up into small spots or dots; the specimen figured is an intermediate form, the marginal spots being large and contiguous. — In **punctinotata** Btlr. (22e) the ground-colour is very light, sulphur-yellow, and the marginal bands are only represented by minute dots at the extremities of the veins. — This species occurs almost everywhere in the Ethiopian Region except Arabia.

**T. eximia** Thur. (22b, c) The distal margin of the hindwing uniformly curved. This species is unknown to me in nature and was described from a single ♀. Upper surface pure sulphur-yellow with reddish fringes; the black apical band of the forewing begins at the costal margin about  $\frac{1}{3}$  before the apex and is rather sharply defined and runs in a curve distad, terminating in a point on vein 2; on the under surface the costal and distal margins of the forewing are rather broadly red-brownish and the entire hindwing delicately tinged with red-brown. German East Africa.

**T. brigitta** has the distal margin of the hindwing uniformly curved. The black marginal band of the forewing above is always 5—7 mm. in breadth at the apex, is in the ♂ continued at the costal margin to the base and at the distal margin to the hinder angle, but in the ♀ is more or less interrupted at the hinder angle and at the costal margin does not always reach the base. — **brigitta** Cr. (22f) may be easily recognized by the reddish fringes and the reddish colour of the under surface of the forewing and of the costal border of the forewing; the upper surface of the ♀ is not or but little sprinkled with black scales. f. **zoë** Hopff. (22f) has a sulphur-yellow under surface and the fringes are never reddish; the upper surface of the ♀ is often rather densely sprinkled with black scales. The whole of Africa south of the Sahara; Madagascar and Aldabra. — **pulchella** Bdv. (22f) only occurs on Madagascar and Mauritius and differs only in having the black marginal band of the hindwing above broader, at the apex 3.5—4 mm. in breadth, and the ground-colour of the upper surface somewhat darker, but not so reddish as in the figure.

### 13. Genus: **Colias** F.

The genus *Colias* is represented in the mountainous districts of Europe, Asia and North America by numerous, often very beautiful species; one species extends the furthest towards the north of all the butterflies and others are distributed along the Cordilleras to the southern point of America. Also in the mountain-regions of Africa species of *Colias* occur; one species has even reached the most southerly part of the continent; on Madagascar and all the other islands, however, they appear to be entirely absent. The African species agree so nearly with the European that a detailed description of the genus is superfluous; for this cf. vol. 1, p. 62, pl. 25—27; vol. V, p. 90, pl. 27; vol. IX, p. 164, pl. 72.

**C. hyale** L. (vol. 1, pl. 25 g). This European species occurs in Abyssinia in a form which is very similar to *sareptensis* Stgr. The ground-colour of the upper surface is bright lemon-yellow; the broad black marginal band of the forewing, which is proximally almost rectangularly incised at vein 4, encloses large yellow spots and the marginal band of the hindwing is moderately broad or broken up into spots; the median spot of the forewing is somewhat smaller than in the typical European form and the under surface is bright yellow, somewhat darker than the upper. — **marnoana** Rog., from the Soudan, is said to differ from the type-form in the absence of the orange-yellow median spot on the hindwing and in having a smaller, elongate median spot on the forewing.

**C. electo** L. (22f) is very similar to the European *croceus* Geoffr. and should probably be regarded as only a race of the latter. It is smaller, has the ground-colour above brighter, red-yellow with violet-red



*aurivillius*. reflection, and the under surface greener; in the ♀ the basal part of the forewing above is more broadly blackish. ♀-ab. **aurivillius** *Kef.* (22f) has white ground-colour on both wings. The typical form only occurs in South Africa. Specimens from the Cameroons and East Africa are larger and scarcely distinguishable from *croceus* *Geoffr.* These are erroneously figured as *hecate* on pl. 22 g. — The larva feeds also in South Africa on species of clover and other Leguminosæ; it bears fine hairs and is yellowish green and densely sprinkled with black dots; the dorsal line is darker green and the lateral line white or yellowish white, above the lateral line the ground-colour is darker green. Pupa light green, semitransparent; the process of the head is obtuse; the dorsal line is darker green; head and wing-cases with black markings; the lateral line of the abdomen greenish white.

*hecate*.

**C. hecate** *Streck.* I only know from the description and the original figures. It is evidently allied to *electo*, but is larger and has in the ♂ a very light orange-yellow ground-colour above, at the costal margin of the hindwing lemon-yellow, the black marginal band of the forewing unspotted and formed almost as in *electo*; the median spot moderately large; the hindwing with moderately broad marginal band and a double light orange-yellow median spot; the under surface is lemon-yellow, the forewing with blackish, the hindwing with brown, small submarginal spots; the median spot of the hindwing double beneath also, silver-white with brown ring. The ♀ has above a lemon-yellow or white ground-colour; in the lemon-yellow form the forewing is slightly tinged with orange-yellow at the middle of the hindmargin; the marginal band of the forewing with the usual yellow spots, otherwise scarcely differing from the ♂. The fringes and the costal margin of the hindwing in both sexes red. In the white ♀-form the base of the forewing above is broadly blackish. The species was described from specimens from Ovim Bunda in the Congo region.

## Alphabetical List

of the forms of the Ethiopian Pieridæ with reference to the original descriptions.

\* signifies that the form is also figured in the place cited.

*abti* *Pieris Suff.* *Iris* 17, p. 77.  
*abyssinica* *Pieris Lucas*, *Rev. Mag. Zool.* (2) 4, p. 328.  
*abyssinicus* *Terac. Btlr.* *Ann. Mag. Nat. Hist.* (4) 18, p. 486.  
*acaste* *Terac. Klug*, *Symb. Phys.*, t. 7. \*  
*achine* *Terac. Cr.* *Pap. Exot.* 4, p. 94. \*  
*aequimargo* *Mylothr. Thuran*, *Berl. Ent. Zeitschr.* 48, p. 141.  
*affinis* *Pieris Mab.* *Bull. Soc. Philomat.* (7) 3, p. 138.  
*agathina* *Mylothr. Cr.* *Pap. Exot.* 3, p. 76. \*  
*agoye* *Terac. Wallengr.* *Rhop. Caffr.*, p. 15.  
*agrippina* *Pieris Fldr.* *Novara, Lep.* 2, p. 173.  
*agrippinides* *Pieris Holl.* *Proc. U. S. Nat. Mus.* 18, p. 758.  
*alarmi* *Pieris Suff.* *Iris* 17, p. 81.  
*alba* *Pieris Wallengr.* *Rhop. Caffr.*, p. 10.  
*alba* *Terac. Auriv.* *Seitz, Macrolep.* 13, p. 51. \*  
*albida* *Appias Mab.* *Hist. Mad. Lep.* 1, p. 261.  
*albidus* *Terac. Auriv.* *Seitz, Macrolep.* 13, p. 54.  
*albomaculatus* *Terac. Auriv.* *Seitz, Macrolep.* 13, p. 55. \*  
*alcesta* *Lept. Cr.* *Pap. Exot.* 4, p. 175. \*  
*aldabrensis* *Terac. Holl.* *Proc. U. S. Nat. Mus.* 18, p. 269. \*  
*alenrona* *Catops. Btlr.* *Ann. Mag. Nat. Hist.* (4) 18, p. 489.  
*aliena* *Terias Btlr.* *Ann. Mag. Nat. Hist.* (5) 5, p. 337.  
*amatus* *Terac. F.* *Ent. Syst.* 3:1, p. 202.  
*amelia* *Terac. Lucas*, *Rev. Mag. Zool.* (2) 4, p. 427.  
*anali* *Pieris Suff.* *Iris* 17, p. 83.  
*analís* *Mylothr. Auriv.* *Arkiv f. Zool.* 3:19, p. 4. \*  
*anax* *Terac. Smith.* *Ann. Mag. Nat. Hist.* (6) 3, p. 125.  
*anjuana* *Terias Btlr.* *Ann. Mag. Nat. Hist.* (5) 3, p. 189.  
*annae* *Terac. Wallengr.* *Rhop. Caffr.*, p. 16.  
*anomala* *Pieris Btlr.* *Proc. Zool. Soc. Lond.* 1881, p. 178. \*  
*anomalus* *Terac. Auriv.* *Seitz, Macrolep.* 13, p. 55. \*  
*ansorgei* *Terac. Marsh.* *Proc. Zool. Soc. Lond.* 1897, p. 13.  
*antevippe* *Terac. Bdv.* *Spec. Gen. Lep.* 1, p. 572.  
*antigone* *Terac. Bdv.* *Spec. Gen. Lep.* 1, p. 572.  
*antsiauka* *Pieris Ward.* *Ent. Mon. Mag.* 7, p. 30.  
*arabica* *Eron. Hopff.* *Peters Reise Mossamb. Ins.*, p. 363.  
*arenicolens* *Terac. Btlr.* *Ent. Mon. Mag.* 21, p. 81.  
*argia* *Eron. F.* *Syst. Ent.*, p. 470.  
*argillacens* *Terac. Btlr.* *Ann. Mag. Nat. Hist.* (4) 19, p. 459.  
*arne* *Terac. Klug*, *Symb. Phys.*, t. 7. \*  
*asphodelus* *Mylothr. Btlr.* *Proc. Zool. Soc. Lond.* 1887, p. 572.  
*astarte* *Pieris Btlr.* *Proc. Zool. Soc. Lond.* 1899, p. 971. \*  
*auriginea* *Pieris Btlr.* *Proc. Zool. Soc. Lond.* 1886, p. 374.  
*aurigineus* *Terac. Btlr.* *Ann. Mag. Nat. Hist.* (5) 12, p. 103.  
*aurivillii* *Terac. Suff.* *Iris* 17, p. 85.  
*aurivillius* *Colias Keferst.* *Verh. zool.-bot. Ges. Wien* 32, p. 457.

*anroa* *Eron. Suff.* *Iris* 17, p. 87.  
*auxo* *Terac. Lucas*, *Rev. Mag. Zool.* (2) 4, p. 422.  
*bachus* *Terac. Btlr.* *Proc. Zool. Soc. Lond.* 1888, p. 73.  
*bachi* *Appias Suff.* *Iris* 17, p. 74.  
*balangensis* *Pieris Rebel & Rogenh.* *In Baumann Masai-Land*, p. 326.  
*basalis* *Mylothr. Anriv.* *Arkiv f. Zool.* 3:19, p. 5.  
*bernice* *Mylothr. Hew.* *Exot. Butt. Pleris*, t. 8. \*  
*bettoni* *Terac. Btlr.* *Proc. Zool. Soc. Lond.* 1898, p. 409.  
*bisinuata* *Terias Btlr.* *Ann. Mag. Nat. Hist.* (4) 18, p. 485.  
*blanca* *Terac. Suff.* *Iris* 17, p. 129.  
*bognensis* *Pieris Fldr.* *Novara, Lep.* 2, p. 173.  
*bowkeri* *Terac. Trim.* *Trans. Ent. Soc. Lond.* 1883, p. 358.  
*brassicoides* *Pieris Guér.* *Lep. Voyag. Abyss.* 6, p. 365. \*  
*brenda* *Terias Dbl. & Hew.* *Gen. Diurn. Lep.*, p. 79. \*  
*brigitta* *Terias Cr.* *Pap. Exot.* 4, p. 82. \*  
*buqueti* *Eron. Bdv.* *Spec. Gén. Lep.* 1, p. 607.  
*caeca* *Pieris Cannav.* *Bull. Soc. Ent. Ital.* 32, p. 293.  
*caere* *Pieris Fldr.* *Ann. Mus. Wien* 4, p. 450.  
*calais* *Terac. Cr.* *Pap. Exot.* 1, p. 84. \*  
*callianira* *Herp. Mab.* *Bull. Mus. Paris* 1899, p. 373.  
*calypso* *Pieris Drury.* *Ill. Exot. Ins.* 2, p. 30. \*  
*caudidus* *Terac. Btlr.* *Proc. Zool. Soc. Lond.* 1881, p. 178.  
*capensis* *Eron. Hopff.* *Peters Reise Mossamb. Ins.*, p. 363.  
*capricornus* *Pieris Ward.* *Ent. Mon. Mag.* 8, p. 59.  
*carnifer* *Terac. Btlr.* *Proc. Zool. Soc. Lond.* 1876, p. 138. \*  
*caspi* *Mylothr. Suff.* *Iris* 17, p. 72.  
*casta* *Terac. Gerst.* *Archiv f. Naturg.* 37:1, p. 357.  
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### 3. Family: Danaididæ.

Of this family only the subfamily of the *Danaidinae* is represented in the Ethiopian Region. This embraces only species of medium size, with broad wings and elongated abdomens. The forelegs are aborted in both sexes, without claws, in the ♂ with unjointed, in the ♀ with jointed tarsi. They are at once distinguishable from the other families with similarly formed forelegs by the basally forked median vein of the forewing. The cell of both wings is always closed. The palpi are short and the claws simple.

The ♂♂ are usually distinguished by retractile pencils at the end of the abdomen or by scale-spots on the upperside of the hindwing or forewing.

The eggs are obtusely spindle-shaped, have many longitudinal ribs and also numerous transverse lines between the ribs.

The larvæ are cylindrical and have on the dorsum two or several pairs of long, filiform, fleshy appendages,

The pupæ are short, thick and obtuse with rounded head, and hang perpendicularly without girth.

The Danaids may in general be regarded as poisonous insects and hence are not usually eaten by most vertebrates, and are not easily attacked by mites and other pests in collections.

In the Ethiopian Region but few genera and species occur. With the exception of three, however, all the species are confined to this region. The genus *Euploea*, so conspicuous in the Indo-Malayan Region, occurs in the Ethiopian only on the Maskarenes and Seychelles, and is entirely absent on the continent of Africa.

#### Synopsis of the Genera.

- I. Vein 8 of the hindwing only separates from the upper median vein after or at the origin of the precostal vein and forms with the former a very narrow, but distinct basal cell.
  - A. Vein 10 of the forewing arises from or behind the apex of the cell. The transverse vein of the cell of the forewing is so strongly incurved that vein 5 arises much nearer to the base than to vein 10.
    1. *Danaida* Latr.
  - B. Vein 10 of the forewing arises before the apex of the cell. The transverse vein of the cell of the forewing is only feebly incurved, so that vein 5 arises not or but little nearer to the base than to vein 10.
    - a. Vein 7 of the hindwing arises much nearer to 6 than to 8.
      2. *Amauris* Hbn.
    - b. Vein 7 of the hindwing arises almost midway between veins 6 and 8.
      3. *Amaurina* Auriv.
- II. Vein 8 of the hindwing separates from the upper median vein rather far before the origin of the precostal vein and forms no basal cell.
  4. *Euploea* F.

#### 1. Genus: **Danaida** Latr.

The club of the antenna is cylindrical and gradually narrows into the shaft. The palpi are short and scarcely project beyond the head.

Members of this extensive genus occur in all parts of the world. The Ethiopian Region is, however, relatively poor in species. They may be divided into three groups according to the sexual characters of the ♂♂ and the markings.

#### **Chrysippus** Group.

The middle discocellular vein of the hindwing very strongly, almost rectangularly, incurved. The ♂ with small scale-pouch, scarcely standing out beneath, at vein 2 of the hindwing; the entrance to the pouch above surrounded by a large black spot. — Larva with three pairs of fleshy filaments on the dorsum, on segments 2, 5 and 11. — The wings in the Ethiopian species with brown-yellow to yellow-brown ground-colour and black, white-dotted marginal band.

**D. chrysippus** is widely distributed over the warmer districts throughout the Old World and almost everywhere very common. The apex of the forewing is above broadly black with a narrow, white subapical band composed of 4—5 spots in cellules 3—6 and 9—10. The species forms several local races, of which the type-form **chrysippus** L. was described from Egypt and occurs everywhere on the continent of Africa; *chrysippus*.



it is distinguished by having the white subapical spot in cellule 4 of the forewing smaller, more rounded, and more or less completely separated from spot 5; also the other subapical spots are shorter and more rounded than in the eastern local form; the hindwing has a brown-yellow ground-colour. ab. **chrysipellus** *Strand* is an extreme form, in which the spot in cellule 4 of the forewing is circular and is separated from the spot in cellule 5 as well as from that in cellule 2. Cameroons. — **alcippus** *Cr.* (vol. I, pl. 28a) only differs from the type-form in the ground-colour of the hindwing, which is more or less extended white. Occurs among the typical form, but is very common in the West African forest region, where it almost entirely supersedes the type-form. — **orientis** *Auriv.* (vol. I, pl. 28a as *chrysippus*) has a much broader white subapical band on the forewing with the spot in cellule 4 elongate, quadrate and touching the spot in cellule 5 for a long distance; the hindwing without white: it occurs in South and East Africa among typical *chrysippus* as a transitional form, but on the East African islands is almost the only form, being the commonest one in South Asia. ab. **alcippoides** *Moore* has the hindwing more or less white, but otherwise agrees with *orientis* and occurs together with it.

**D. dorippus** *Klug* (vol. I, pl. 28b) is similar to the preceding species, but is at once distinguishable in that the apex of the forewing is brown-yellow and only margined with black and has no white subapical band; the ground-colour is not darkened at the base, and the hindwing not white. ab. **infumata** *Auriv.* (vol. I, pl. 28b, as *klugii*) only differs in having the brown ground-colour of both wings darkened at the base. ab. **albinus** *Lanz.* (vol. I, pl. 28b) has the middle of the hindwing more or less broadly white. As var. **transiens** *Suffert* describes a form in which a white subapical band is more or less distinct on the underside of the forewing. — The species occurs in South and East Africa, in Arabia, on Sokotra and the Comoro Islands; but is entirely absent in West Africa; it is often regarded as only a form of *chrysippus*, but of this there is no sufficient evidence. — *D. chrysippus* and *dorippus* serve in Africa as models for a whole series of mimetic species; the former for *Hypolimnas misippus* ♀ with ab. *alcippoides*; *Pseudacraea poggei*; *Acræa encedon* with ab. *alcippina*; *Mimacraea marshalli*; *Telipna sanguinea*; *Cooksonia trimeni*; *Aletis helcita*; *Euphaedra ruspina*; *Papilio dardanus* ♀-f. *trophonius*, and many others; the latter for *Hypolimnas misippus* ♀-f. *inaria* and *dorippoides*; *Acræa encedon* ab. *daira*; *Mimacraea dohertyi*; *Acræa johnstoni* ab. *fulvescens* and *Papilio dardanus* ♀-f. *dorippoides*.

### Limniace Group.

The middle discocellular vein of the hindwing is only slightly curved or quite straight. The ♂ has in cellule 1c of the hindwing a large scale-pouch, beneath projecting as a sack. The wings are ornamented with numerous light spots on a dark ground; the spots at the base are elongate, but in and behind the middle rounded and arranged in 2—4 irregular curved rows. — The larva only possesses 2 pairs of fleshy filaments, which are placed on segments 2 and 11 (= *Tirumala* *Moore*).

**D. petiverana** *Dbl. & Hew.* (23a), has a blackish ground-colour and light green markings: the forewing has only a longitudinal streak at the base in the cell, but the hindwing deeply cleft basal streaks in cellules 1b, 1c and the cell: the cell of the forewing has a transverse spot behind the middle: the forewing has three discal spots in cellules 1b—3 and 2 each in cellules 4—6; the submarginal spots are small and punctiform, the hindwing has two larger proximal discal spots (in cellules 4 and 5), a complete curved row of distal discal spots and small submarginal dots; the under surface is lighter grey-brown than the upper and only blackish in the middle of the forewing. Common everywhere in the tropical districts of Africa; wanting in South Africa and on the East African islands.

### Formosa Group.

This group, peculiar to the Ethiopian Region, is very nearly allied to the preceding and only differs in having no spots on the basal third of the forewing and the basal spots of the hindwing large and undivided. The spots on the wings are arranged practically as in the *Limniace* Group, but are less numerous. — *Melinda* *Moore* (= *Elsa* *Honr.*).

**D. morgeni** *Honr.* (23a) has the forewing blackish, somewhat brownish at the base, and the hindwing black-grey; the forewing has a white spot behind the middle of the cell, a large discal spot in cellule 2. 2 white subapical spots in 5 and 6 and midway between these latter a transverse row of 4 white spots; the hindwing has 3 large white basal spots and in addition only 4 submarginal spots in cellules 3—6; the under surface coloured and marked as the upper. Cameroons.

**D. mercedonia** *Karsch* (23b). The unspotted basal part of the forewing and the hindwing to beyond the middle are dark chestnut-brown, the other parts blackish; the light spots are whitish and formed almost as in *morgeni*; but the hindwing has behind the middle a row of spots distinct also in cellules 1a—3 and submarginal dots. German East Africa, Uganda and Toro. — *Papilio mimeticus* may be mentioned as a mimic.

**D. formosa** *Godm.* (23 b) differs from the two preceding species in having the basal part of the forewing almost to the middle and the costal margin of the hindwing bright brown-yellow; the light spots are more complete and almost as fully developed as in *petiverana*; the hindwing has large spots at the base of cellules 4 and 5; these spots are absent or only indicated in the two preceding species. German and British East Africa — **neumanni** *Rothsch.* occurs in Abyssinia and only differs in the darker, yellow-brown ground-colour of the basal part of the forewing. — *Papilio rex* is considered to be a mimic of *D. formosa*. *formosa.*  
*neumanni.*

## 2. Genus: **Amauris** *Hbn.*

This extensive genus is quite peculiar to the Ethiopian Region, where it occurs everywhere.

The species often occur in great individual abundance and give a characteristic stamp to the fauna. They all have black wings with white or yellow markings. The forewing has usually the following light markings: 1—2 spots in the cell; 4—9 discal spots, often large, in cellules 1 a—6, 9 and 10, of which, however, spot 1 a is usually absent and spot 3 is often placed much nearer to the distal margin than the others; 3—6 submarginal dots, of which those in cellules 1 b, 2, 3, 6 and 7 are nearly always present; and several small marginal dots, which are often only distinct beneath. The hindwing has usually a light transverse band or a large light area, which is sometimes placed at the base, sometimes in the middle or at times even somewhat behind the middle and is but rarely entirely absent; in addition there are usually also small submarginal and marginal dots. — The larva is cylindrical, with short, fine hairs, and possesses four or five pairs of moderately long fleshy appendages, which are placed on the dorsum of segments 2, 3, 5 and 11. — The pupa has a very thin shell and is short and thick, obtusely rounded anteriorly and with long, stalk-shaped cremaster; the upper surface is strongly glossy. — The butterflies only occur in wooded districts.

The species may be divided into 5 groups according to the secondary sexual characters of the ♂ and the scheme of markings.

### Synopsis of the Groups.

- A. The hindwing of the ♂ above in cellules 1 b and 1 c long-haired, but without mealy spot. — The hindwing unicolorous black-brown without light basal area or light transverse band and only with small white submarginal dots. — *Cadytis* *Moore.* *Vashti* Group.
- B. The hindwing of the ♂ above near to the anal angle with a mealy spot divided by vein 1 b, and standing out from the ground through its lighter or darker colour. — The hindwing nearly always with light basal area or with light transverse band; rarely unicolorous black-brown, but then also entirely without submarginal and marginal dots.
  - a. The wings with entire, unicolorous, dark fringes. *Niavius* Group.
  - b. The wings with undulate or dentate, irregularly white-spotted fringes.
    - a. The hindwing with light basal area or with a transverse band, which is placed in or before the middle and covers the middle of the cell.
      1. The light area of the hindwing reaches almost to the base of the cell and is usually pure white, but when yellowish, indistinctly defined distally. *Egialea* Group.
      2. The light area of the hindwing is sharply defined on both sides, yellow or rarely whitish, and does not usually reach the base of the cell. *Echeria* Group.
    - b. The hindwing with a yellow transverse band of almost uniform breadth, which is placed behind the middle and only covers the apex of the cell (= *Berethis* *Moore*). *Phaedon* Group.

### Vashti Group.

The only species of this group is the largest of the Ethiopian Danaiids.

**A. vashti** *Btlr.* (23 d). The forewing is 48—58 mm. in length with two large connected discal spots in 1 b and 2 nearly in the middle of the hindmargin and with smaller, separated or almost separated discal spots (subapical spots) in cellules 5 and 6; the cell is unspotted or has at most 2 white dots; 5—6 submarginal dots are present; the hindwing has only submarginal dots. Distributed from the Niger to the Congo and Aruwimi and common in many districts. *vashti.*

### Niavius Group.

The species which belong here are at once distinguished from all the others by the entire, unspotted fringes of the wings. The hindwing above usually without submarginal and marginal dots.



**A. niavius** is easy to recognize by the large hindmarginal spot, reaching the hindmargin, and the broad, continuous, white subapical band of the forewing and the large, white basal area of the hindwing, which is far removed from the hinder angle and divided by the deep black veins; the cell of the hindwing is unspotted or has a white transverse streak at the costal margin behind the middle; the forewing with, the hindwing without submarginal dots. the mealy spot of the ♂ is black-grey and hence stands out but little. — In **niavius** L. (23 d) the white basal area of the hindwing reaches at most to the apex of the cell; the subapical band of the forewing is 6—8 mm in breadth and reaches the submarginal dots in cellule 3. Sierra Leone to Angola and Uganda. — **aethiops** Rothsch. & Jord. only differs from the typical form in having the subapical band of the forewing narrower, leaving the submarginal dots free in cellule 3. Abyssinia. — **dominicanus** Trim. (23 c) is the southern and eastern race and is at once distinguished by the white basal area of the hindwing extending far beyond the apex of the cell; the subapical band of the forewing is also broader on an average. 8—10 mm. in width. From Natal to British East Africa: in the districts bordering on Victoria Nyanza occur distinct transitions to the typical form. — As mimetic parallel forms to *niavius* must be mentioned the local races of *Hypolimnas anthedon* and some female forms of *Papilio dardanus* (*hippocoon* and *hippocoonoides*).

The following three species are very nearly allied and are distinguished by having the discal spot in cellule 3 of the forewing larger than those of cellules 4 and 5 and separated from them, being placed nearer to the distal margin. The discal spot in cellule 2 is large, reaches vein 3 and touches a quadrate spot in the cell and a usually streak-like spot in cellule 1 b. The mealy spot of the ♂ near the anal angle of the hindwing is almost black and hence stands out distinctly against the somewhat lighter ground-colour. Vein 11 of the forewing touches vein 12. — The forms of *Hypolimnas dubius* form a parallel mimetic series with those of this group.

**A. damocles.** The light basal area of the hindwing reaches at least the middle of the cell; the discal spot in cellule 3 of the forewing is rounded. — **damocles** Beaur. The light basal area of the hindwing does not reach the apex of the cell; the hindwing usually without submarginal dots; cellule 1 a on the forewing unicolorous black. ab. **psyttalea** Plötz (25 a) only differs in that the white basal area of the hindwing reaches to the apex of the cell or somewhat beyond it; the hindwing has usually white submarginal dots in cellules 3—6. These two forms occur in the whole of West Africa from Sierra Leone to Angola and Uganda and intergrade without any dividing line. — **damocles** Stgr. (25 b) has a large basal area on the hindwing, which extends so far beyond the apex of the cell that at vein 4 the dark marginal band is only 5—6 mm. in breadth: in cellule 1 a of the forewing there is a white line and often also a white streak in the basal part of cellule 1 b; the submarginal dots of cellules 3—6 on the hindwing are always well developed. East Africa to Uganda.

**A. tartarea** Mab. (25 a). The forewing is marked quite as in *damocles* or has a short whitish streak in the basal part of cellule 1 b; the hindwing is above unicolorous black-brown without markings or at most slightly scaled with white at the base (= ab. **reata** Suff.). Cameroons, Gaboon, Congo Region.

**A. bulbifera** Smith (25 a) differs from the preceding in having the discal spot in cellule 3 of the forewing more or less distinctly continued as a curved streak to the posterior inner angle of cellule 3; the discal spot in cellule 1 b of the forewing is larger and often double, in the basal part of this cellule there is a white streak; the white basal area of the hindwing is small and does not reach the apex of the cell. Cameroons, Gaboon and German East Africa. — Larva brown-black with a row of oval yellowish spots at each side of the dorsum, which are larger on the first and last segments; there are also similar spots on the sides; head and legs deep black.

To this group also apparently belongs **A. mozarti** Suff. Black with white markings; forewing in cellule 2 with a large discal spot which fills up the base of the cellule and extends to the middle of cellule 1 b; three small discal spots are placed in cellules 3, 4 and 5, the one in 3 is but little larger than that in 2 and is about midway between distal margin and median; in the cell there is a large quadrate spot, adjacent to spot 2, and in the basal part of cellule 1 b a white dot; small submarginal spots in 1 b, 6, 7, 9 and 10; hindwing with a small whitish basal area, covering the base of cellule 6 and a part of the cell and of cellule 7. Cameroons.

### Egialea Group.

The species of this group are easy to recognize by the uneven, white-spotted fringes of the wings and the white, rarely somewhat yellowish basal area of the hindwing. They form two natural subgroups.

### 1. Sub-Group.

The discal spot in cellule 6 of the forewing is always present and forms with the discal spots of cellules 4 and 5 a continuous white subapical band. The hindwing with large white basal area, extending beyond the apex of the cell. The discal spot in cellule 1b of the forewing is always present. — The mealy spot of the ♂ is elongate and lighter than the ground-colour of the hindwing.

**A. fenestrata** *Auriv.* (25b). The white spot in the cell of the forewing is very large, covering the entire apical part of the cell, and is united with the large discal spots of cellules 2—6 into a large, white median area; these discal spots completely cover the basal part of their cellules; the white basal area of the hindwing is large and reaches the inner margin; the subapical dots of both wings are well developed. French Congo; rare. *fenestrata.*

**A. nossima** *Ward* (23d). The white spot in the cell of the forewing, as in the preceding species is very large, but does not cover the apex of the cell; discal spots 4—6 on the forewing are far removed from the apex of the cell and form a broad, free subapical band; the white basal area of the hindwing is very large and distally sharply defined; the hindwing is bright chestnut-brown beneath at the anal angle. Madagascar and Mayotte. *nossima.*

**A. ochlea** *Bdv.* (24a) is smaller than the two preceding species and differs in that the white spot in the cell of the forewing is smaller and above all only fills up the space between veins 2 and 3; the discal spot in cellule 1b reaches vein 1 and forms with the spot in the base of cellule 2 and the one in the cell a broad continuous transverse band. Not rare from Natal to British East Africa. *Hypolimnias deceptor* is similarly coloured and marked. *ochlea.*

**A. ochleides** is very nearly allied to *ochlea*, but differs in that the discal spot in cellule 1b of the forewing consists only of a narrow streak behind vein 2 and does not reach vein 1. — **ochleides** *Stgr.* The spot in the cell of the forewing is quadrate and more or less broadly united with the discal spot in cellule 2; cellules 2—6 of the hindwing each with two distinct submarginal dots. Abyssinia. — **darius** *Rothsch. & Jord.* only differs from the type-form in the submarginal dots of the hindwing being less numerous and the light basal area somewhat smaller. South Abyssinia. — **affinis** *nom. nov.* (= *comorana Auriv.*) (25c), like *darius*, has the submarginal dots on the hindwing but little developed, but differs in that the discal spot in cellule 2 of the forewing is proximally produced to a point and completely or almost completely covers the base of the cellule. Comoro Islands. — **bumilleri** *Lanz* (24b) differs from the other three forms in having the spot in the cell of the forewing smaller and completely separated from the rest of the spots; the submarginal dots are feebly developed. German East Africa between Lakes Nyassa and Tanganika. *ochleides.* *darius.* *affinis.* *bumilleri.*

### 2. Sub-Group.

The discal spot in cellule 6 of the forewing is entirely absent or is at most indicated by a dot. The basal area of the hindwing rarely extends beyond the apex of the cell.

**A. hecate** *Btlr.* (24b). The spot in the cell of the forewing touches for a longer or shorter distance the spot in cellule 2; this is often accompanied by a streak in cellule 1b; the discal spots in cellules 4 and 5 of the forewing touch one another for almost their entire length and are placed at nearly the same distance from the apex; the white basal area of the hindwing is small, reaching at most veins 2 and 5; the submarginal dots of the hindwing are absent or weakly developed; it should be noted as very characteristic of this species that on the underside of the hindwing, and often on the upperside also, two discal spots are present in cellules 6 and 7, which form a transverse spot at the middle of the costal margin and are well separated from the (sometimes light) base of cellule 6; the mealy spot of the ♂ is blackish and darker than the ground-colour; in the ♀ the basal area of the hindwing is normally somewhat larger than in the ♂, covering also the base of cellules 6 and 7; sometimes it is not larger than in the ♂, = f. **reducta** *Bartel.* In the whole West African forest region from Sierra Leona to Congo and Uganda. — **stictita** *Rothsch. & Jord.* is smaller and has smaller spots on the forewing, but more numerous and more distinct submarginal spots on the hindwing. Abyssinia. *hecate.* *reducta.* *stictita.*

**A. hecatoides** *Auriv.* (26c) is very similar to the preceding species and has like it a large spot in the cell of the forewing, which is only separated by the vein from the spot in cellule 2, while the discal spot in cellule 1b is absent or streak-like and placed close to vein 2, just as in *hecate*; the most important differences from *hecate* are that the discal spot in cellule 4 of the forewing is placed much nearer to the distal margin than the one in cellule 5 and scarcely touches this or only for a short distance, that the discal spot in cellule 2 is more produced proximally and often completely covers the base of cellule 2, that the white spots on the *hecatoides.*



underside of the hindwing in cellules 6 and 7 at the middle of the costal margin are entirely absent and that the mealy spot of the ♂ is yellowish and lighter than the surrounding ground-colour. Congo region. — *reuteri*. **reuteri** Strand is unknown to me, but appears only to differ from the typical form in having a wedge-shaped discal spot in cellule 3 of the forewing. Cameroons.

*dira*. **A. dira** Neav has the wings shaped as in the preceding species, but bears like those which follow a punctiform spot in the cell of the forewing, widely separated from the discal spot of cellule 2; the latter is large and rectangular, the spot in cellule 4 is absent or very small; the hindwing is marked quite as in *hecate* and bears a white spot in cellule 7 at the middle of the costal margin. Uganda.

*inferna*. **A. inferna** Btlr. (24 b) has the spot in the cell of the forewing rather large, but well separated from that in cellule 2; the discal spot in cellule 4 is placed much nearer to the distal margin than the one in cellule 5 and does not touch or scarcely touches the latter; the spot in cellule 1 b is absent; the basal area of the hindwing is white or yellowish white, usually only reaching vein 2, rarely the apex of the cell, but often covering the base of cellules 4—6—7; submarginal spot 3 on the forewing is larger than the others. Ashanti, Cameroons, Fernando Po; French Congo.

*egialea*. **A. egialea** Cr. (25 c) is very similar to the preceding species, but differs in having the basal area of the hindwing yellowish and distally indistinctly defined; it usually reaches the apex of the cell and the proximal end of the mealy spot of the ♂; the submarginal spots of the forewing (in 1 b 2, 3, 6 and 7) are all rounded and of almost equal size. Sierra Leona to Angola and Aruwimi. The specimen figured is a somewhat aberrant form from Uganda.

**A. dannfelti** Auriv. The forewing is marked almost exactly as in the last two species and discal spots 4 and 5 of the forewing are short, almost quadrate, and spot 4 is placed so much nearer to the distal margin that it does not touch spot 5 or only with its proximal angle; it is distinguished from all the other species of this subgroup by having the basal area of the hindwing pure white, distally sharply defined and so large as to extend far beyond the apex of the cell; hence the dark marginal band is at vein 4 only about 6 mm. in breadth. Congo region.

**A. hyalites** Btlr. (24 b) The spot in the cell of the forewing is always separated by an interspace from the discal spot in cellule 2 and the spot in cellule 1 b is absent; it differs from the similarly marked species in that discal spots 4 and 5 of the forewing are elongated and touch one another for at least  $\frac{2}{3}$  of their length; the basal area of the hindwing is white, at the inner margin and distally yellowish, and reaches at least to the apex of the cell; the mealy spot of the ♂ is yellowish. From the Cameroons to Angola and Equatoria.

### Echeria Group.

The species of this group are distinguished by having the light area of the hindwing not reaching the base, but forming a broader or narrower transverse band, which is sharply defined at both sides and usually yellow or yellowish. The forewing is marked almost alike in all the species; discal spots 1 a, 1 b and 3 are widely separated and those in cellules 4 and 5 are small, quadrate or rounded and almost always separated, the spot in cellule 4 being placed much nearer to the distal margin; the submarginal spots are well developed.

*echeria*. **A. echeria**. The dark basal area of the hindwing reaches at least to vein 7 and is 5—6 mm in breadth; second palpal joint with punctiform white spot; abdomen beneath as dark as the marginal band of the hindwing; forewing nearly always with submarginal spot in cellule 8; in the ♂ the mealy spot at the anal angle of the hindwing is small, about 3 mm. in length, and the last dorsal plate of the abdomen is scarcely incised at the end. — **echeria** Stoll. (24 c). The yellow transverse band of the hindwing is about 10 mm. in breadth and reaches the apex of the cell; all or almost all the spots on the upper surface are yellow. Larva black with fine blue dorsal line, interrupted yellow subdorsal line and orange-yellow lateral line; spiracles with a blue ring; 2nd, 4th, 6th, 11th and 12th segment with a pair of short fleshy filaments. From the Cameroons to South and East Africa. — **steckeri** Kheil has the transverse band of the hindwing narrower, only 6 mm. in breadth, but otherwise agrees with the typical form. Abyssinia — **jacksoni** E. Sharpe (24 c) differs from the typical form in having all the spots of the forewing white and the numerous spots of the hindwing yellowish above, white beneath. German and British East Africa, Uganda and Abyssinia. — **oscarus** Thunberg (= *prominens* Grünb.) (24 d) differs in having the median band of the hindwing narrower, scarcely extending beyond vein 2; the hindwing has above only three white submarginal spots and the submarginal spot in cellule 8 of the forewing is wanting; in this and in the somewhat more elongate white spot on the second joint of the palpi *oscarus* approaches the following species. Uganda.

**A. albimaculata** Btlr. (27 d) has like the preceding species a large black basal area on the hindwing, reaching vein 7, and is also otherwise so similar to *echeria* that it was formerly regarded as only a form of this; it can, however, be distinguished in that the second joint of the palpi has a long white streak, that the abdomen beneath is as light as the light area of the hindwing, that the submarginal spot in cellule 8 of the forewing is nearly always absent and that in the ♂ the mealy spot of the hindwing is about 6 mm. in length and the last dorsal plate of the abdomen is deeply incised at the extremity. All the spots are white and the transverse band of the hindwing in the typical form yellow. South and East Africa to Uganda. — **hanningtoni** Btlr. (24 b) only differs in the transverse band of the hindwing being white or yellowish white. German East Africa, especially common on the Kilimandjaro Mountains. *albimaculata.*  
*hanningtoni*

**A lobengula** differs from the preceding in having the dark colour at the base of the hindwing much less extended, not reaching vein 7. — **lobengula** E. Sharpe (25 d). The yellow transverse band of the hindwing is very broad and in the ♂ reaches the small mealy spot at vein 1b; the discal spots of the forewing are yellow and the submarginal spot in cellule 8 is distinct. Matabeleland, Mashonaland, Nyassaland. — **katangae** Neave has white spots on both wings, but otherwise agrees with *lobengula*. Rhodesia and Katanga district. — **crawshayi** Btlr. (24 d). The yellow or white transverse band of the hindwing is less broad and in the ♂ does not nearly reach the mealy spot; the black marginal area of the hindwing is consequently much broader at the inner margin, usually extending almost to its middle; the submarginal spot in cellule 8 of the forewing is absent and the forewing has consequently only two light spots at the apex; all the spots on both wings are white. — Nyassaland. — **whytei** Btlr., which is unknown to me, appears only to differ from *crawshayi* in having the discal spots of the hindwing yellowish. Nyassaland. *lobengula.*  
*katangae.*  
*crawshayi.*  
*whytei.*

**A. comorana** Oberth. is marked almost like *crawshayi*, but has larger, almost contiguous discal spots in cellules 4 and 5 of the forewing, a small submarginal spot in cellule 8 of the forewing and in each of cellules 2—6 of the hindwing two large submarginal spots, which are placed almost in the middle of the broad black marginal band; all the spots as well as the transverse band of the hindwing and the underside of the abdomen are yellow. Comoro Islands. *comorana.*

#### Phaedon Group.

The sole species of this group approximates in its markings to the species of the *Echeria* group, but differs in that the black-brown basal area of the hindwing reaches the middle of the wing and covers the base of cellules 2, 4, 5 and 6.

**A. phaedon** F. (24 d) has black-brown wings with yellow markings; the cell of the forewing is usually unspotted; the discal spots of cellules 2, 4 and 5 are small; the yellow transverse band of the hindwing is only 6—7 mm. in breadth, placed behind the middle and composed of a spot in the apex of the cell and one each in cellules 1b—6; both wings with yellow submarginal and marginal spots. Madagascar and Mauritius. *phaedon.*

#### 3. Genus: **Amaurina** Auriv.

The species have been hitherto referred to *Amauris*, but are at once distinguished in both sexes by having vein 7 of the hindwing arising almost midway between vein 6 and 8 and not, as in *Amauris*, much nearer to vein 6. — The forewing has a transverse spot in the cell, which is well separated from the large spot in cellule 2, and behind the apex of the cell a small transverse band composed of the discal spots in cellules 4—6 (and 9). The submarginal spots are well developed and often large, on the hindwing there are, at least beneath, two in each cellule, irregularly obliquely placed. The yellow basal area of the hindwing is of medium size and reaches the base, but not the apex of the cell. The fringes are light-spotted and uneven.

**A. ellioti** Btlr. (25 b). All the spots on both wings are yellow and the submarginal spots on the upperside of the hindwing large and fully developed. Ruwenzori. *ellioti.*

**A. ansorgei** E. Sharp. (24 d). All the spots are white and the submarginal spots on the upperside of the hindwing partially absent. Nyassaland, German East Africa, Uganda. *ansorgei.*

„*Amauris*” **grogani** E. Sharpe is unknown to me and the description is so incomplete that it is impossible to decide whether it belongs to the *Niarius* group of *Amauris* or to *Amaurina*. The description runs: Allied to *A. damocles* Beauv. as regards the situation of the white spots of the primaries, but in its general appearance resembling *A. ansorgei*. Primaries: ground-colour dark brownish black, relieved by a number of white spots as in *A. damocles*; the white spot in cellule 2 not extending so far as in the last-named species; all the spots somewhat smaller in size than in *damocles*. Secondaries with more than half the wing brownish black; the basal area pale ochre; near to the hindmargin a row of nearly obsolete whitish spots, those near the apical *grogani.*



area being the most strongly marked. Underside: central area of the primaries dark brownish black, the apical area lighter brown; all the white spots distinctly marked, but much reduced in size when compared with those of *damocles*. Secondaries with more than half the wings light brown, the basal area pale ochre-yellow; the extreme base dark brown, this colour extending along the costal margin; near the hindmargin a distinct row of white spots, varying in size and situated between the nervules; on the extreme edge a row of minute white twin spots. Mushari between Kiwu and the Albert Edward Nyanza.

#### 4. Genus: **Euploea** F.

This genus, so extremely characteristic of the Indo-Malayan and the Austro-Malayan region as well as of the islands of the Pacific Ocean, is only represented in the Ethiopian Region on the Mascarene and Seychelles Islands off the east coast of Africa and affords a proof of the former connection between these islands and the southern parts of Asia. Just as on the islands of the Indian and Pacific Oceans, quite different species occur here also on the different islands.

The ♂♂ are often distinguished by special mealy or velvety spots on the fore- or hindwing or on both. On these and on trifling differences in the shape of the wings MOORE has based a large number of genera. But as a female cannot be determined by these generic characters and species which are apparently nearly allied have often to be separated, it is doubtful whether these „genera” are natural or not. The question can only be settled by a closer study of the earlier stages.

The larvae are unfortunately but little known, but appear to differ considerably in the number and arrangement of the long fleshy tubercles or filaments.

It is a well-known fact that the Asiatic Euploeids are more or less exactly mimicked by many other butterflies. On the African Islands there are also two butterflies which should probably be regarded as mimics of *E. euphon* and *goudoti*, namely *Salamis augustina* and the ♀ of *Papilio phorbanta*; the former species is now almost extinct, but the latter is very common on Bourbon.

On the numerous Indian forms of this genus cf. vol. 1X, p. 225—272, pl. 79—86.

*euphon.*

**E. euphon** F. (23 c). The forewing is bluish black, lighter at the hindmargin, and has a complete or almost complete row of rather large white submarginal spots, of which those in cellules 6—8 form a sub-apical band; small white discal spots are sometimes present in cellules 3—6, 9 and 10; the hindwing is black-brown and has behind the middle a yellowish white transverse band, 5—6 mm. in breadth, which close to the distal margin is accompanied by 8—10 small rounded spots; on the under surface there are in addition white discal dots with black margins in cellules 3—6 and in the cell. In the ♂ there are no mealy spots or other special distinctions and the hindmargin of the forewing is straight. — The larva lives on *Nerium*; it is dirty white, with a lateral row of black dots and four pairs of fleshy filaments, placed on the 3rd, 5th, 6th and last segment. — The pupa is glossy golden green. Mauritius.

*desjardinsi.*

**E. desjardinsi** (Guér. 25 d). This rare species, which is figured here for the first time, only occurs on the small island of Rodriguez; it is very similar to the preceding species, but much smaller with lighter ground-colour and without light dots between the distal margin and the light transverse band of the hindwing.

*goudoti.*

**E. goudoti** Bdv. (23 b) comes from the island of Bourbon; the wings are above deep black-brown from the base to beyond the middle, then lighter brown; the forewing entirely without submarginal and marginal spots, but sometimes with 1—3 small discal spots; the hindwing about 2 mm. before the distal margin with a row of 8—10 almost continuous whitish spots; the underside of both wings with 5—7 white discal dots; the ♂, as in *euphon*, has a straight hindmargin to the hindwing and no mealy spots. — The larva is glossy greenish white with black head, the first segment orange-yellow, and 4 pairs of fleshy filaments.

*mitra.*

**E. mitra** Moore (25 d) belongs to quite another group of this genus, in which the sexes are entirely dissimilar. — In the ♂ the hindmargin of the forewing is strongly ventricose and in cellule 1b is placed on both surfaces a deep black longitudinal streak, which is composed of special scales and is called a “brand-mark”; the forewing above and beneath with a white transverse band about 6 mm. in breadth, composed of 8 spots (in cellules 2—6 and 9—11), and with small white submarginal spots; the hindwing above from the costal margin to the median glossy grey with silvery reflection and with indistinct grey spots at the distal margin, beneath with 7—8 white discal dots and at the distal margin with a double row of rounded white spots. — In the ♀ the hindmargin of the forewing is quite straight and the brand-mark is absent; but the white markings developed almost as in the ♂. Only occurs on the Seychelles.

**E. rogeri** Geyer. Of this species, said to come from the Seychelles, only a single specimen appears to be known, which was described and figured by CARL GEYER as long ago as 1837. If the specimen really came from the Seychelles it is probably now extinct, as it has not been found again by those who have explored those islands in recent years. The figure represents a ♀, and somewhat recalls the ♀ of *mitra*; the wings have a black-brown ground-colour with white markings; the forewing has in cellule 1b two long longitudinal lines, which are above brownish and beneath white, in the apex of the cell a white spot, behind the apex a white transverse band, which as in *mitra* consists of spots in cellules 2—6 and 9—11 (the spot in cellule 2 is separated and rounded), and white submarginal spots, of which those in cellules 5 and 6 are larger. The hindwing has a white spot in the apex of the cell and close behind the cell a broad white transverse band widened at the inner margin, the spots of which in 1b and 1c are streak-like and in the other cellules broad and distally pointed; close to the distal margin are placed in each cellule two white dots; on the under surface there is in addition a longitudinal streak in cellule 7 and a dot each in the basal part of cellules 2, 5 and 6.

*rogeri*

## Alphabetical List

with reference to the original descriptions of the forms of the Ethiopian *Danaididae*.

\* signifies that the form is also figured at the place cited.

- aethiops** Amauris. *Rotsch & Jord.* Nov. Zool. 10, p. 503.  
**affinis** Amauris. *Auriv.* Seitz, Macrolep. 13, p. 75.  
**albimaculata** Amauris. *Btlr.* Ann. Mag. Nat. Hist. (4) 16, p. 394.  
**albinus** Dan. *Lanz.* Iris 9, p. 130.  
**alcippoides** Dan. *Moore.* Proc. Zool. Soc. Lond. 1883, p. 238. \*  
**alcipus** Dan. *Cr.* Pap. Exot. 2, p. 45. \*  
**ansorgei** Amaurina. *E. Sharpe.* Ann. Mag. Nat. Hist. (6) 18, p. 158.  
  
**bulbifera** Amauris. *Smith.* Ann. Mag. Nat. Hist. (5) 19, p. 369.  
**bumilleri** Amauris. *Lanz.* Iris 8, p. 380. \*  
  
**chrysippellus** Dan. *Strand.* Archiv f. Naturg. 57: 1, p. 375.  
**chrysippus** Dan. *L.* Syst. Nat. Ed. 10, p. 471.  
**comorana** Amauris. *Oberth.* Bull. Soc. Ent. Fr. 1897, p. 191. \*  
**crawshayi** Amauris. *Btlr.* Proc. Zool. Soc. 1896, p. 821. \*  
  
*Palisot*  
**damocles** Amauris. *Beauv.* Ins. Afr. et Amer., p. 239. \*  
**damocles** Amauris. *Stgr.* Iris 8, p. 367. \*  
**dannfelti** Amauris. *Auriv.* Ent. Tidskr. 12, p. 196.  
**darius** *Rothsch. & Jord.* Nov. Zool. 10, p. 503.  
**desjardinsi** Eupl. *Guér.* Icon. Règn. Anim. Ins., p. 474.  
**dira** Amauris. *Neave.* Nov. Zool. 11, p. 324. \*  
**dominicanus** Amauris. *Trim.* Trans. Ent. Soc. Lond. 1879, p. 323.  
**dorippus** Dan. *Klug.* Symb. Phys. t. 48, Text.  
  
**echeria** Amauris. *Stoll.* Suppl. Cram. p. 135. \*  
**egialea** Amauris. *Cr.* Pap. Exot. 2, p. 146. \*  
**elliotti** Amaurina. *Btlr.* Ann. Mag. Nat. Hist. (6) 16, p. 122.  
**euphon** Eupl. *F.* Ent. Syst. Suppl. p. 423.  
  
**fenestrata** Amauris. *Auriv.* Archiv f. Zool. 3: 19, p. 1. \*  
**formosa** Dan. *Godw.* Proc. Zool. Soc. 1880, p. 183. \*  
  
**gondoti** *Bdv.* Faune Madag., p. 36. \*  
**grogani** Amaurina. *E. Sharpe.* Ann. Mag. Nat. Hist. (7) 8, p. 278.  
  
**hanningtoni** Amauris. *Btlr.* Proc. Zool. Soc. Lond. 1888, p. 91.  
**hecate** Amauris. *Btlr.* Proc. Zool. Soc. Lond. 1866, p. 44.  
**hecatoides** Amauris. *Auriv.* Ent. Tidskr. 22, p. 113. \*  
  
**hyalites** Amauris. *Btlr.* Cist. Ent. 1, p. 209.  
**inferna** Amauris. *Btlr.* Proc. Zool. Soc. Lond. 1871, p. 79.  
**infumata** Amauris. *Auriv.* Rhop. Aethiop., p. 33.  
  
**jacksoni** Amauris. *E. Sharpe.* Proc. Zool. Soc. Lond. 1891, p. 633. \*  
  
**katangae** Amauris. *Neave.* Proc. Zool. Soc. Lond. 1910, p. 8 \*  
  
**lobengula** Amauris. *E. Sharpe.* Ann. Mag. Nat. Hist. (6) 6, p. 346.  
  
**mercedonia** Dan. *Karsch.* Ent. Nachr. 20, p. 228.  
**mitra** Eupl. *Moore.* Cat. Lep. Ins. E. Ind. Comp. 1, p. 127.  
**morgeni** Dan. *Honr.* Berlin. Ent. Zeitschr. 36, p. 436. \*  
**mozarti** Amauris. *Suff.* Iris 17, p. 12.  
  
**neumanni** Amauris. *Rothsch.* Nov. Zool. 9, p. 596.  
**niavins** Amauris. *L.* Syst. Nat. Ed. 10, p. 470.  
**nossima** Amauris. *Ward.* Ent. Monthl. Mag. 6, p. 225.  
  
**ochlea** Amauris. *Bdv.* Voy. Deleg. 2, p. 589.  
**ochleides** Amauris. *Staud.* Iris 8, p. 366. \*  
**orientis** Dan. *Auriv.* Voeltzk. Reise 2, p. 310.  
**oscarus** Amauris. *Thurau.* Berlin. Ent. Zeitschr. 48, p. 301.  
  
**petiverana** Dan. *Dbl. & Hew.* Gen. Diurn. Lep., p. 93.  
**phaedon** Amauris. *F.* Ent. Syst. Suppl., p. 423.  
**psyttalea** Amauris. *Plötz.* Stettin. Ent. Zeit. 41, p. 189.  
  
**reata** Amauris. *Suff.* Iris 17, p. 13.  
**reducta** Amauris. *Bartel.* Nov. Zool. 12, p. 129.  
**reuteri** Amauris. *Strand.* Wien. Ent. Zeit. 29, p. 31.  
**rogeri** Eupl. *Geyer* in Hbn. Zutr. Exot. Schm. 5, p. 36. \*  
  
**steckeri** Amauris. *Kheil.* Berlin. Ent. Zeitschr. 33, p. 393. \*  
**stictica** Amauris. *Rothsch. & Jord.* Nov. Zool. 10, p. 504.  
  
**tartarea** Amauris. *Mab.* Bull. Soc. Zool. Fr. 1, p. 199.  
**transiens** Amauris. *Suff.* Berlin. Ent. Zeitschr. 45, p. 115.  
  
**vashti** Amauris. *Btlr.* Cist. Ent. 1, p. 1.  
  
**whytei** Amauris. *Btlr.* Proc. Zool. Soc. Lond. 1893, p. 664.





#### 4. Family: Satyridæ.

As in the preceding and following families, so also here the forelegs in both sexes are aborted and without claws; the foretarsi in the ♂ are long-haired and unjointed, but in the ♀ less hairy and with short joints. The Satyrids are distinguished from the Danaidids by having the submedian vein of the forewing simple at the base and by the entirely different pattern; from the Nymphalids they differ in the compressed palpi and in having the cell of both wings completely closed by a strong transverse vein. One to three of the veins on the forewing are inflated at the base, a structure which among the Nymphalids is only found in the *Eurytelinae* and the *Eunicinae*.

The Satyrids are small or medium-sized butterflies, the wings usually of a dark, blackish or black-brown colouring, which beneath and often also above is adorned with submarginal eye-spots or eye-dots; occasionally other light markings also occur. The wings are thin and slenderly built and the flight is slow and fluttering. The species occur both in open districts and in the deepest shades of the primeval forests.

The egg is somewhat higher than broad, spherical or barrel-shaped, and usually not narrower above than beneath; its surface is smooth or has numerous shorter or longer ribs, which are nearly always simple and straight.

The larva is smooth or often fine-haired, gradually narrowing anteriorly and especially posteriorly and is distinguished by the last segment terminating in two longer or shorter points. The head usually appears cleft above or armed with two long spines. The larvae live on grasses or nearly allied monocotyledonous plants and are usually of a green or greenish colour and hence difficult to find when resting on the blades of grass.

The pupae are rather short and thick, rounded without sharp angles or corners; the head is rounded or with two points. They are suspended free by the anal end or sometimes lie on the ground among stones or grass-culms.

The Satyrids occur in all parts of the Ethiopian Region. Almost all the species and 10 of the 15 genera are peculiar to this fauna. It is worthy of note that the Satyrids play a far more important rôle on Madagascar than in the other African subregions. They form there about 24 per cent of the butterflies and are represented by some 50 species peculiar to the island.

Cerning the habits and the peculiarities of the Satyrids of other countries and continents cf. vol. I, p. 79; vol. V, p. 173; vol. IX, p. 285.

The Satyrids of the Ethiopian fauna belong to two subfamilies, of which the first is often regarded as a separate family.

##### Synopsis of the Subfamilies.

- A. The hindwing at the base with distinct subcostal cell, very large in the ♀, which is formed by vein 8 being connected by a transverse vein with the anterior margin of the middle cell. Vein 8 diverges gradually from the very beginning from the anterior margin of the middle cell. 1. *Elymniinae*.
- B. The hindwing without subcostal cell. 2. *Satyrinae*.

##### 1. Subfamily: Elymniinae.

On the forewing the costal vein only is inflated at the base. In the markings the Elymniinids differ from the Satyrinids in having the wings at least beneath densely covered with fine transverse streaks. Only one African genus.

##### 1. Genus: **Elymniopsis** *Fruhst.*

This genus is nearly allied to the typical genus *Elymnias*\*) from the Indo-Malayan Region and only differs from it materially in having veins 6 and 7 of the hindwing arising much nearer together. The earlier stages are not known.

\*) See vol. IX, p. 371—392, pl. 87—90.



- phegea*. **E. phegea** *F.* (26 a). The forewing is black-brown with a large orange-yellow hindmarginal spot and an orange-yellow discal band; these almost touch in cellule 2; at the costal margin there are small white striae from the base to beyond the middle; the hindwing is above orange-yellow with a broader or narrower marginal band, which is formed of more or less confluent, brown transverse streaks. Beneath the wings are coloured nearly as above, but the transverse streaks are much more distinct and distributed over almost the entire surface of the hindwing. ab. **angustata** *Bartel* has a narrower and lighter yellow discal band on the forewing. In *angustata*, *intermedia*. **intermedia** *Auriv.* this band is pure white and likewise narrower than in the type-form. — Liberia to Gaboon.
- bammakoo*. **E. bammakoo** *Westw.* (26 a) differs from *phegea* in having the markings white or whitish; the hindmarginal spot of the forewing is much smaller and does not usually reach vein 2; the light basal area of the hindwing is also much more restricted, the dark marginal band on the contrary much broader; on the underside of the hindwing the ground-colour is often more or less yellowish. Everywhere in the West African forest region.
- ratrayi*. **E. ratrayi** *E. Sharpe* (26 a) has an almost perpendicular orange-yellow transverse band on the forewing, which extends from the costal to the hindmargin, but is sometimes shortly interrupted in cellule 1b; the broad median area of the hindwing is pure white. Uganda. — ab. **ugandae** *Grünb.* only differs in having the transverse band of the forewing broader in cellules 2 and 3. Uganda.
- ngandae*.

## 2. Subfamily: Satyrinae.

The forms of this subfamily are almost always distinguished by the wings having beneath a submarginal transverse row of eye-spots. The development of the eye-spots is essentially dependent on the seasons. The rainy-season (summer) forms have large, more numerous and more sharply prominent eye-spots, whilst in the dry-season (winter) forms they are small and punctiform or entirely disappear. This variability of the eye-spots is sometimes also accompanied by differences in the ground-colour of the under surface.

In order to simplify the synopsis, I divide the 14 genera into four groups.

### Synopsis of the Generic Groups.

- |   |                         |
|---|-------------------------|
| I. Claws cleft.   | <i>Melanitis</i> Group. |
| II. Claws simple.   |                         |
| A. The forewing with three veins strongly inflated at the base. | <i>Mycalesis</i> Group. |
| B. The forewing at most with two veins inflated at the base.    |                         |
| a. Eyes hairy.  | <i>Pararge</i> Group.   |
| b. Eyes naked.  | <i>Ypthima</i> Group.   |

### Melanitis Group.

To this group belong only two genera, which are very nearly allied and agree in having the palpi scaled, the eyes naked and both wings more or less angled or tailed. The forewing is sharply angled at the end of vein 5 and the hindwing tailed at vein 4. The under surface is very variable, either finely striated or marbled, resembling dry leaves. The butterflies love dark places in the woods and rest on the ground among fallen leaves; they are crepuscular in their habits and for the most part fly only in the evening shortly before sunset.

## 2. Genus: **Melanitis** *F.*

The precostal vein of the hindwing arises after the separation of vein 8 from the anterior margin of the cell. This genus is represented in Africa by three species, but is very strongly represented in the Indo-Malayan Region (FRUHSTORFER distinguishes 100 forms in the Indian region. The habits of *Melanitis* are fully described in vol. I, p. 88 and vol. IX, p. 261—262).

- leda*. **M. leda** *L.* was described from Amboina and occurs in the Indo-Malayan Region in a number of races, which are not very sharply distinguished. — The Ethiopian form **africana** *Fruhst.* does not differ materially from the Indian, the only particular difference being that the red-yellow subapical area on the upperside of the forewing is on an average larger. In the rainy-season form the wings are above dark brown, the hindwing without red-yellow, but the forewing nearly always before the apex with a large red-yellow spot, which covers a great part of cellules (2) 3—6 and encloses two black, white-pupilled eye-spots in cellules 3 and 4; the under surface is grey, finely watered with brown, and has distinct black, yellow-ringed and white-pupilled eye-spots, of which there are usually three on the forewing in cellules 3, 5 and 6, and six on the hindwing in cellules 1c—6; these often occur above also, although here smaller. In the dry-season form the under surface is marbled or banded and the eye-spots are small and punctiform or entirely absent; the

upper surface is either coloured as in the rainy-season form or more or less, sometimes almost completely, suffused with red-yellow or red-brown. — **fulvescens** Guen. (= *zitenides* Fruhst.) (26 b). The red-yellow colour on the upperside of the hindwing usually shades off into the ground-colour without any sharp dividing line, but occasionally in specimens from the Cape Verde Islands it forms a sharply defined subapical spot, — ab. **plagiata** Auriv. — Larva light yellowish green with whitish longitudinal stripes and two spines on the head. Lives on grasses and especially on rice. Common everywhere in the whole region. *fulvescens.* *plagiata.*

**M. libya** Dist. (26 b) is above unicolorous dark brown and has before the apex of the forewing a large black patch, covering cellules 3—6 and enclosing two large, oblong white spots (in cellules 3 and 4); the under surface is marbled as in the dry-season form of *leda* and has no distinct eye-spots. The rainy-season form is unknown to me. Senegal, Nyassaland, Manicaland, German East Africa, Uganda. — ab. **nyassæ** Bartel has the forewing but little angled at vein 5 and a much smaller black subapical patch and smaller white spots on the forewing. Nyassaland. *libya.* *nyassæ.*

**M. ansorgei** Rothsch. Both wings above black-brown with violet or blue reflection; the forewing near the apex with a white transverse band, extending from the costal margin towards the projecting angle at vein 5; the hindwing of the ♂ with a mealy spot covered with hairs at the middle of vein 1 b; the under surface irregularly irrorated with grey. Rare, only found in the dense primeval forests of the French and Belgian Congo districts. *ansorgei.*

### 3. Genus: **Gnophodes** Westw.

The species of *Gnophodes* differ from those of the preceding genus in the precostal vein of the hindwing arising at or before the point of separation of vein 8. The ♂♂ are characterized by special velvety or mealy spots. — Larva with two cylindrical, obtuse, erect horns on the head and the anal extremity deeply forked. The pupa is suspended free and is of almost uniform thickness with obtusely rounded head. The species may be divided into two groups according to the mealy spots of the ♂♂.

#### First Group.

The ♂♂ near the hindmargin of the upperside of the forewing in cellule 1 b with a large, oval mealy spot, which is covered with long, distally directed hairs. Hindmargin of the forewing nearly straight.

**G. grogani** E. Sharpe has an expanse of about 80 mm. and is therefore larger than the other species; the distal margin of the forewing between the triangular tooth at vein 5 and the hindmargin is quite smooth and nearly straight; in the ♂ the forewing has above a large, long-haired mealy spot also in the basal part of cellule 2; both wings above black-brown, the forewing with a gently curved, sharply defined, yellow subapical band, gradually narrowed posteriorly, between the costal margin and vein 1; the under surface marbled almost as in *parmeno* and with similar eye-spots. British Central Africa in the Mushari district and at the Ruwenzori. *grogani.*

**G. parmeno** Dbl. & Hew. (26 b). The forewing is above blackish to the subapical band; the subapical band curved, in the ♂ indistinct and narrow, in the ♀ somewhat more distinct and broader; distal margin of the forewing between vein 5 and the hinder angle irregular; ♂ only in cellule 1 b with mealy spot; the under surface, as the figure shows, is brown marbled with white and yellowish. West African forest region from Sierra Leone to Angola and Uganda. — **diversa** Btlr. (26 c) is the South and East African race, which only differs in the broader and more sharply defined yellow subapical band on the upperside of the forewing. It is distributed from Natal to British East Africa. Larva green with green longitudinal lines. Pupa unicolorous green without markings, with the surface glossy and wax-like. In **betsimena** Bdv. the light transverse band of the forewing is even broader, at the costal margin about 7 mm. in breadth, sharply and evenly bounded and lighter, whitish yellow; the distal margin of both wings is narrowly yellowish. Madagascar. — **dubiosa** form. nov. (26 c), of which I only know the figured ♀, from the Cameroons, entirely agrees with *parmeno* beneath and only differs in having the transverse band on the upperside of the forewing white and the forewing scarcely angled. Probably only a female form of *parmeno*. *parmeno.* *diversa.* *betsimena.* *dubiosa.*

#### Second Group.

The ♂♂ at the anterior margin of the cell of the hindwing above with a large, elongate-oval, chalk-white mealy spot, which is covered by the strongly projecting middle part of the hindmargin of the forewing and to which corresponds a similar spot on the underside of the forewing.

**G. chelys** F. (26 c). Both wings above black-brown, in the ♀ lighter than in the ♂; the forewing with a slight indication of a reddish subapical band; the under surface as in the other species irregularly spotted and sprinkled with white eye-spots. Larva light green, with fine, short whitish hairs, head dark brown with a white spot on the face and above with two small hairy horns; lives on a coarse, broad-leaved *chelys.*



- pythia*. grass. Pupa green. Sierre Leona to Angola and Uganda. In ♀-ab. **pythia** *F.* (26 b, last figure) the forewing has at two-thirds of the costal margin a narrow white transverse band, which reaches vein 5. Commoner than the typical female form similar to the ♂. ♀-ab. **harpa** *Karsch* has a more distinct, yellowish subapical band on the forewing than the type-form. Togoland. In ♀-ab. **iris** *Bartel* both wings have above a distinct violet-blue reflection. Cameroons, hinterland.
- minchini*. **G. minchini** *Heron* differs from the preceding species in having the forewing even shorter and broader and with the distal margin straight and almost smooth between vein 4 and the hinder angle; the subapical band of the forewing is narrow but distinct and rather sharply defined; it reaches vein 1 or at least vein 2; the under surface is darker than in *chelys*. Uganda and Ruwenzori. — ab. **magniplaga** *Heron* differs in the larger size of the white mealy spot in the ♂: this is 13—14 mm. in length, thus almost as long as the cell. Ruwenzori.

### Mycalesis Group.

The genera of this group are very closely allied and are distinguished by having three veins on the forewing strongly inflated at the base; these are the costal, the median and the submedian vein.

On the under surface of the wings almost all the species agree in having the basal half usually darker and separated by a transverse line (the median line) from the distal half, which contains the eye-spots.

The wings in the ♂♂ are nearly always distinguished by hair-pencils or mealy spots. The group is also very rich in species in the Indo-Malayan Region. No species, however, is common to the Ethiopian and Indo-Malayan Regions. The Ethiopian species belong to three different genera.

### Synopsis of the genera.

- |                                   |                        |
|-----------------------------------|------------------------|
| A. Eyes naked                     | 4. <i>Mycalesis</i> .  |
| B. Eyes hairy.                    |                        |
| a. Apex of forewing not produced. | 5. <i>Henotesia</i> .  |
| b. Apex of forewing falcate.      | 6. <i>Heteropsis</i> . |

### 4. Genus: **Mycalesis** *Hbn.*

True *Mycalesis* only occur in the Ethiopian Region. Species from Asia and Australia which have been referred to *Mycalesis* have hairy eyes and belong to other genera\*).

The larvae have two horns on the head and the body is of the normal Satyrid shape.

The ♀♀ of the numerous species agree in venuration, wing-contour and other structural characters so completely that it is impossible to divide them into groups. But the pencils and mealy spots peculiar to the ♂♂ present distinctions which can be utilized for forming artificial groups. Although these groups have thus the great defect that the position of a ♀ cannot be ascertained I nevertheless use them here in order to facilitate the analysis of the numerous species. In the ♂♂ of all the species there is in the cell of the hindwing above near the base of the costal margin a long hair-pencil, directed anteriorly or obliquely distad.

### Synopsis of the Groups.

- |  |                       |
|--|-----------------------|
| A. In the ♂ vein 7 of the hindwing arises much nearer to vein 6 than to vein 8 or is even stalked with the former.*  |                       |
| a. In the ♂ there is in the cell of the hindwing at the posterior margin between the point of origin of veins 2 and 3 a hair-pencil directed obliquely distad and posteriorly. | <i>Iccius</i> Group.  |
| b. The hindwing of the ♂ without this hair-pencil.   | <i>Eradue</i> Group.  |
| B. In the ♂ vein 7 of the hindwing arises halfway between veins 6 and 8 or nearer to 8, occasionally somewhat nearer to 6, but not twice as far from 8 as from 6.              | <i>Safitza</i> Group. |

### Iccius Group.

The species are on an average larger than in the other groups and often have the hindwing somewhat produced and pointed at the anal angle. In the single known larva belonging to this group the points on the last segment are rudimentary, knobbed. — All the species belong to the tropical parts of West Africa.

**M. hewitsoni.** Both wings above black-brown, the forewing with a blue or violet transverse band, often whitish at the distal side, beginning at the costal margin close behind the apex of the cell and reaching the hinder angle; the hindwing above with a blue or violet marginal band, which is broadest at the costal

\*) Cf. FRUHSTORFER'S discussion of *Culapa*, etc. in vol. IX, p. 332 seq.

margin, becomes gradually narrower and terminates at vein 1c or at the anal angle; the dark basal area on the underside of the forewing is cut off straight distally. — **hewitsoni** *Doumet* (26 d). The under surface with sharply prominent, black eye-spots with yellow rings and white pupils, two of equal size on the forewing in cellules 2 and 5, and 6 on the hindwing in cellules 1c, 2, 4, 5 and 6, of which those in cellules 2 and 6 are the largest: in cellule 1c are placed two eye-spots, of which, however, the posterior one is small or indistinct. Cameroons, Gaboon and Congo. — **subocellata** *Bartel* (26 c) only differs in the small, paler and punctiform eye-spots on the under surface and is probably only a seasonal form of *hewitsoni*. Southern Congo district.

**M. bicolor** *Bartel* (26 d) only differs above from *hewitsoni* in having the blue transverse band of the forewing broader and placed nearer to the distal margin; on the underside of the forewing the dark basal part is not cut off straight distally, but projects ventricosely distad, the distal area of the forewing is whitish and has only two small eye-spots (in 4 and 5), the large eye-spot in cellule 2 being entirely absent. In the hinterland of the Cameroons.

A third similar species is **M. nanodes** *Sm.*, which is unknown to me in nature, but according to the description agrees with *bicolor* above; beneath the dark basal half is distally bounded by a narrow, light violet band; the marginal area on the underside of the forewing is violet-brown and has two small eye-spots in cellules 4 and 5 and a larger one in cellule 2; the hindwing with eye-spot also in cellule 3, consequently with 7 altogether, of which those in cellules 2 and 6 and the first in cellule 1c are the largest. Is probably only a form of *hewitsoni* or *bicolor*; the shape of the distal edge of the basal area on the forewing beneath is unfortunately not mentioned in the description. In the forests on the Aruwimi River.

**M. medontias** *Hew.* (26 e). The forewing above with a sharply defined blue transverse band, extending from the middle of the costal margin to the hinder angle and enclosing the eye-spot in cellule 2 which shows through from beneath; the hindwing above unicolorous black-brown, at the anterior margin of the cell in the ♂ with a glossy elongate spot, which is almost entirely covered by the forewing; on the under surface this species differs from all others in having the slightly darker basal part distally bounded by a broad, sharply defined, almost straight, white transverse line; the eye-spots are black, with yellow rings and white pupils; there are 4 on the forewing (one in cellule 2 and three joined together in cellules 4—6) and 7 on the hindwing, of which two are in cellule 1c; the first of these and those in cellules 2 and 6 are larger than the others. The larva is above quite naked and smooth, with very short, fine hairs on the sides, green with numerous dark transverse lines, which are interrupted by the upper lateral lines; at the hindmargin of each segment are placed 4 dark dorsal dots in a transverse line; the head is rough, finely granulated and fine-haired, with 4 large black spots; behind on the neck there are two smaller black spots: the horns on the head are obtuse and have two dark rings; the anal fork is rudimentary and only consists of two obtuse protuberances, obliquely directed upwards; in the markings, the shape of the body and the horns on the head the larva strongly recalls a slug. Pupa unicolorous green with quadrate, very sharply angled cremaster. — Cameroons to the Congo.

**M. iccius** *Hew.* (26 d) is larger than the preceding species and above similarly marked, but with the transverse band of the forewing curved and posteriorly narrowed; the whole under surface is dark grey and is divided into four parts by three dark brown transverse lines; between the second and third transverse lines are placed the yellow-ringed and white-pupilled eye-spots; in the cell of the forewing there are three black-brown transverse streaks, of which the outermost is united posteriorly with the first transverse line; the first and second transverse lines are almost straight and parallel, the third on the forewing diverges posteriorly and approaches the hinder angle: the third on the hindwing is feebly curved at vein 5: just before the distal margin runs a dark brown undulate line. Old Calabar, Cameroons, Congo, Uganda. — **ephorus** *Weym.* only differs in having the eye-spots on the under surface small or punctiform and is probably only a seasonal form of *iccus*. Gold Coast. In ab. **transiens** *Bartel* the blue band of the forewing is scarcely more than half as broad and the eye-spots very small. Cameroons hinterland.

**M. sebetus** *Hew.* differs above from the preceding species in the blue-violet transverse band of the forewing not being sharply defined and reaching at most to vein 2; beneath the wings are marked much as in *iccus*, but differ in having the third transverse line absent on the forewing and on the hindwing irregularly angulated and indistinct; the eye-spots are small. West Africa from Liberia to Angola. — **una** *Plötz* (26 e) only differs in having a white dot in cellule 5 on the upperside of the forewing and still smaller eye-spots on the under surface. Gaboon. — **kochi** *Grünb.* is probably also only a form of *sebetus*; it is described as follows: Upper surface deep velvety black-brown, the blue subapical band on the forewing reaching posteriorly to just before vein 2; the white dot in cellule 5 which is characteristic of *una* is entirely wanting; under surface olive-coloured, strongly mixed with brown; basal part of the hindwing white; forewing from the middle part



of the costal margin to the posterior part of the distal margin likewise strongly watered with white; the two transverse markings in the cell of the forewing narrower than in *una* and filled up with dark, the subbasal band on the hindwing and the complete discal band running as in *una*, but somewhat narrower; of the eye-spots only the white median dots are sharp and distinct, arranged as in *una* but still smaller, on the forewing in cellules 2 and 5, the spot in cellule 4 being absent, on the hindwing in cellules 1a—6; of the black and brown borderings slight traces are visible only in spots 1b, 2 and 6 on the hindwing and 2 on the forewing. On the Sesse Islands in the Victoria Nyanza.

The following four species differ from the preceding in that the blue transverse band on the upperside of the forewing in the ♂ is entirely absent or only indicated by a diffuse violet shade and that except in *zinebi* a white transverse band is present on the forewing in the ♀.

*zinebi*. **M. zinebi** Btlr. The ♂ above with unicolorous black-brown wings, lighter at the distal margin; the basal half of cellules 1a and 1b on the upperside of the forewing roughened with erect scales and almost black, but without long hairs; the under surface brown-grey with three dark transverse lines, which are arranged almost as in *iceius*; the third transverse line of the hindwing almost uniformly curved; eye-spots only represented by small white dots or entirely absent. Sierra Leone to Togoland.

*italus*. **M. italus** Hew. (26 e). The ♂ is very similar to that of the preceding species, but somewhat larger and in the basal part of cellules 1a and 1b on the upperside of the forewing densely clothed with long, dark hairs; the ♀ is distinguished by the broad white transverse band of the forewing; in both sexes the eye-spots on the under surface are large and well developed and the dark transverse lines sharply prominent. Distributed from the Niger to Gaboon.

*xeneas*. **M. xeneas** Hew. (27 a) differs from the preceding in the light median line on the under surface; the forewing in the ♂ above black-brown, in the apical part lighter brownish and with two eye-spots of equal size in cellules 2 and 5, of which the latter is more distinct and pupilled with white; the hindwing is unicolorous black-brown; the ♀ is larger and differs in the forewing having larger eye-spots and behind the cell a broad white subapical band extending from the costal margin to vein 3, and in both wings being ornamented by a black marginal line; on the under surface the grey, or in the ♀ whitish median line is on both wings distinctly outangled or outcurved at vein 4; the eye-spots stand out sharply and are black with white pupils and an inner yellow and outer brown ring, the two on the forewing and those in cellules 2 and 6 on the hindwing are larger than the others; both wings with a distinct black marginal line. Old Calabar. Cameroons and northern Congo district.

*phalanthus*. **M. phalanthus** Styr. (27 a) is smaller than the preceding species, but otherwise so similar as to be only distinguishable by its having the line on the under surface quite straight, at least on the hindwing. Distributed from the Gold Coast to the mouth of the Congo. In the ♂ there is on the upper surface of the forewing in the base of cellule 2 a dark hair-pencil, which is entirely absent in *xeneas*; in the ♀ the distal part of cellule 1b on the forewing is distinctly lighter behind the large eye-spot, which is not the case in the ♀♀ of *xeneas*.

#### Evadne Group.

The species of this group are distinguished from the following by the approximation of veins 6 and 7 of the hindwing in the ♂. The pencil in cellule 6 of the hindwing, which is usually present in the ♂♂ of the following group, is always absent here. The ♂♂ are further often distinguished by special velvety spots on the hindwing.

*feae*. **M. feae** Auriv. ♂: wings above black-brown, the forewing behind the cell with a lighter transverse band, curved basad at vein 4, and with two black, white-pupilled eye-spots in cellules 2 and 5; hindwing above unicolorous black-brown, at the distal margin somewhat lighter and with two undulate blackish lines; the wings beneath black-brown, at the base suffused with grey, the median line narrowly yellowish white, angled at vein 4 on both wings; the forewing with a brown transverse line near the base, a yellowish line in the cell and two black, white-pupilled eye-spots, each of which is surrounded by a rust-yellow, a blackish and a grey ring; at the distal margin two nearly even dark transverse lines; the hindwing with six eye-spots, two in 1c, a larger one in 2 and one each in cellules 4—6, which are all surrounded by a rust-coloured, a blackish and a grey ring; at the distal margin two slightly undulate lines; hindwing without velvety spot, but with two hair-pencils, one at the anterior margin of the cell and one in the middle of cellule 1c. Discovered on the Island of Fernando Po at an elevation of 1400 m. by the celebrated naturalist LEONARDO FEA.

*sciathis*. **M. sciathis** Hew. (27 a). Under surface of the wings yellow-brown; the hindwing beneath without eye-spots in cellules 1b and 3; the yellow-grey median line on the under surface distinctly curved in S-shape. ♂: wings above unicolorous dark brown, the forewing above only with a single black, white-pupilled eye-spot

near the apex in cellule 5; the hindwing above near the anal angle with a large black velvety spot in cellule 1b; forewing beneath with two black, white-pupilled eye-spots with yellow, brown, and light yellow rings in cellules 2 and 5; at the hindmargin blackish; the hindwing terminally more yellowish and with 5 eye-spots, one each in cellules 1c, 2, 4, 5 and 6; the spots in cellules 2 and 6 larger than the others. The ♀ is larger than the ♂ and distinguished by a sharply defined, white subapical band on the forewing; the band extends from the costal margin to vein 3. Liberia, Old Calabar, Cameroons.

**M. procora** Karsch approaches the preceding species, but differs in both sexes in having the light *procora*. median line on the upperside uniform and almost straight; the under surface is also less yellowish and more grey; in the ♂ the velvety spot at the anal angle of the hindwing is absent, but in its place there is before the middle of cellule 1c a black, distally directed hair-pencil; in the ♀ the white transverse band on the forewing is absent. In Togoland and the Congo.

**M. analis** Auriv. has a yellowish grey under surface with almost smooth or slightly undulate transverse *analis*. lines; the hindwing beneath with distinct eye-spots in cellule 3 and the forewing also above with two light-pupilled eye-spots in cellules 2 and 5. ♂: wings above dark brown, the hindwing at the anal angle with a black velvety spot with grey reflection, divided by vein 1b and in the basal part of cellule 1c long-haired, beneath with 7 distinct eye-spots with yellow, brown and whitish rings, two in cellule 1c and one each in cellules 2–6, the spot in cellule 2 somewhat larger than the others; the eye-spots are placed in an almost uniformly curved row. The ♀ without white transverse band on the forewing. Cameroons and Congo district.

**M. hyperanthus** Baker. This species, which is unknown to me, is said to be nearly allied to *analis* *hyperanthus* and is described as follows: "♂. Both wings blackish brown. Primaries with a small white-pupilled black spot between veins 5 and 6 near the termen; an obscure, small, but quite visible black spot (not pupilled) between veins 2 and 3, neither of these spots have any iris; secondaries with a dark grey sex dash close to the anal angle. Underside: both wings sienna-brown with ocellated spots and with lines; primaries with a large dark spot in the middle of the cell, broadly edged all round except on the costa with pale ochreous brown, beyond which is a very broad, irregular, median dark band produced outwards between veins 3 and 5, and pale edged externally; spots of upperside showing through, but broadly ringed with pale yellowish which has a dark edging followed by a lighter one; the lower spot is very large and conspicuous and is pupilled with white; a dark fine subterminal line in a paler area. Secondaries with the dark median irregular band similar to the primaries, palely edged laterally, but very definitely so externally; a postmedial series of even spots as in the primaries in a pale area, that between veins 2 and 3 being large and that at the apex also somewhat larger than the other five, which are small; terminal area as in the primaries. Upper Congo."

**M. taenias** Hew. (27b) is similar to *M. analis*, but smaller, and has the under surface pure grey, in *taenias*. the distal part of the hindwing whitish, sharply marked, with fine, strongly undulate or dentate transverse lines; the eye-spots arranged as in *analis*, the forewing above with only one eye-spot (in cellule 5). ♂: the hindwing without velvety spot and with a hair-pencil in the cell only: the forewing with long hairs at the middle of the hindmargin. Sierra Leone to Gaboon.

**M. ignobilis** Btlr. (27b), like the following species, has on the underside of the hindwing an eye-spot in *ignobilis*. cellule 1b also and differs in this from all the preceding species. The dark median band on the underside of the wings with the sides almost alike, parallel; the white-pupilled eye-spots on the under surface are surrounded by a yellowish, a blackish and a violet-grey ring; the one in cellule 2 is much larger than the rest; the forewing has two eye-spots and the hindwing 7, one each in cellules 1b, 2, 4, 5 and 6 and two in 1c; those in cellules 4 and 5 of the hindwing are small and placed near to the distal margin; before the distal margin two fine black lines. ♂: wings above violet-black, the forewing somewhat lighter with an eye-spot in cellule 5 and proximally to the eye-spot yellowish; the hindwing above along vein 1b with a long and narrow mealy spot covered with black hairs. ♀: larger than the ♂ and with a white transverse band on the forewing, which extends from the costal margin to vein 3. Gold Coast to the Congo.

**M. nobilis** Auriv. (27b) is similar to the preceding species and has like it an eye-spot in cellule *nobilis*. 1b on the hindwing beneath; it is smaller and has the forewing shorter and broader, with a whitish subapical band in both sexes; the under surface of the hindwing has 8 eye-spots, which are placed in an almost uniformly curved row; the spot in cellule 6 is scarcely larger than the one in cellule 5 and only that in cellule 2 is considerably larger than the rest. ♂: the hindwing above near the anal angle with a black velvety spot, divided by vein 1b and basally bordered with long hairs. ♀: subapical band of the forewing larger and pure white. Cameroons and Gaboon.



*evadne*. **M. evadne** Cr. (27b). ♂: both wings above unicolorous dark black-brown with bluish reflection without eye-spots or other markings, beneath with two somewhat uneven, but almost parallel lighter transverse lines; the eye-spots with an inner yellowish brown and an outer dark brown ring and surrounded by a lighter area; the forewing has a larger eye-spot in cellule 2 and a smaller in cellule 5; the hindwing has two eye-spots in cellule 1c and one each in cellules 2—6, but none in 1b; the eye-spots of cellules 1c—5 are placed in an almost straight line, but the anterior one, in cellule 6, much nearer to the base than the others; the ♂ differs from all the other species in having veins 6 and 7 on the hindwing united into a thickened stalk at their origin. The ♀ is larger than the ♂, above lighter and with a grey-yellowish transverse band on the forewing between the costal margin and vein 3 or 2 and with distinct eye-spots on the forewing; beneath the markings are lighter and more sharply expressed, but otherwise similar to those of the ♂: veins 6 and 7 of the hindwing are not stalked, but arise from the same point. Sierra Leone to Gaboon.

*noblemairei*. **M. noblemairei** Janet is unknown to me, but seems from the description to be scarcely different from *evadne*. "♂: above black-brown with a dark steel-blue reflection like that of the Euploids. Beneath rust-brown with a violet transverse band, between which and the distal margin there is an area wherein are placed: 1. on the forewing two black, white-pupilled eye-spots ringed with yellow, brown and violet, of which the one at the apex is smaller: 2. on the hindwing a row of 7 similar eye-spots, the violet rings of which, however, are confluent: reckoning from the anal angle, the third is the largest, the fourth vestigial and the seventh placed far proximally to the line formed by the rest, and smaller than the third, but larger than the others. Expanse: 42 mm. ♀ unknown". French Congo.

*halyma*. **M. halyma** F. The under surface with whitish or light grey ground-colour; all the eye-spots on the underside of the hindwing in an almost straight line. ♂: wings above unicolorous dark brown with slight violet tinge, before the distal margin with two dark lines; the hindwing at the inner margin near the base with a black-grey mealy spot divided by vein 1a; the under surface with two quite straight and even brown transverse lines and a curved line before the eye-spots; these are black with white pupils and have a yellow and a brown ring; the forewing with 5 eye-spots placed in a straight line in cellules 1b—5; the hindwing with 7 such spots; the spot in cellule 2 on both wings somewhat larger than the rest; before the distal margin two brown undulate lines. The ♀ is larger and has a whitish subapical band on the forewing. Sierra Leone and Liberia.

*asochis*. **M. asochis** Hew. (27c) is distinguished by having both wings above white to far beyond the middle, as also the ground-colour of the under surface. ♂: upper surface with the costal margin of the forewing to vein 4, the inner margin of the hindwing to vein 1b and a broad marginal band on both wings black-brown: near the base of the inner margin of the hindwing is placed as in *halyma* a large mealy spot covered with hairs; under surface yellowish in the basal part, the transverse lines fine and pale, on the hindwing yellowish; before the eye-spots a conspicuous bicurved brown transverse line: forewing with 2 eye-spots, hindwing with 7 placed in a slightly curved row; the eye-spots with a yellow and a brown ring; at the distal margin three fine dark lines. The ♀ differs from the ♂ in having the wings above only darkened at the apex, with three dark marginal lines and a spot in cellule 2: beneath the transverse lines are indistinct or suppressed. Old Calabar to Angola.

### Safitza Group.

Vein 7 of the hindwing in the ♂ arises midway between veins 6 and 8 or even nearer to 8, rarely somewhat nearer to 6, but never twice as far from 8 as from 6. Vein 7 is furthest removed from vein 8 in *M. danckelmanni* and *tolosa*. The forewing of the ♂ in almost all the species has in cellule 1a close behind vein 1 a small, rounded or elongate mealy spot, raised like a wart or weal. — The numerous species of this group are often very much alike and the ♀♀ especially can sometimes only be determined with difficulty if one does not also possess the corresponding ♂♂. In order to facilitate the determination of the species I divide them into several subgroups, chiefly based on the pencils and mealy spots of the ♂♂.

#### 1. Subgroup.

♂: the forewing above near the hinder angle with a black, distally directed hair-pencil, divided by vein 1; the hindwing with hair-pencil only at the anterior margin of the cell, but at the inner margin in cellules 1a—1c with long hairs. Hindwing rounded.

**M. madetes** Hew. (27 d). The wings in the ♂ above dark brown without markings, in the ♀ lighter brown and the forewing with indication of a subapical band and with white-pupilled eye-spots in cellules 2 and 5. On the under surface the basal part is sometimes unicolorous dark brown without distinct markings, sometimes as in the figure, lighter with proximal transverse line, distally it is bordered by a dark, nearly straight and uniform transverse line; the forewing has a larger eye-spot in cellule 2 and a smaller one in cellule 5, the hindwing 7 eye-spots, of which only the one in cellule 2 is considerably larger than the rest. Gold Coast to Gaboon. *madetes.*

## 2. Subgroup.

♂: the hindwing above in cellule 1c near the base or in the apex of the cell, opposite cellule 2, or at both places, adorned with a sharply defined hair-pencil. In addition there is always a pencil at the anterior margin of the cell and nearly always one in cellule 6.

**M. sambulos** Hew. (27 c). The hindwing somewhat produced at the anal angle and with a short, obtuse tail at vein 2. ♂: hindwing above with a pencil both at the base of cellule 1c and in the apex of the cell as well as in the basal part of cellule 2. Wings above dark brown with indistinct light subapical band on the forewing, directed towards the hinder angle; beneath, as the figure shows, finely striated, with small eye-spots and 2—3 fine dark lines at the distal margin. Gaboon. *sambulos.*

**M. mandanes** Hew. (= graphidabra Karsch) (27 c). The hindwing at the anal angle weakly produced, at vein 2 with a very short lobe. ♂: hindwing above with hair-pencil in cellule 1c and in the apex of the cell, but without pencil in cellule 2. Wings above black-brown, the forewing with a yellowish subapical band divided into two spots; the under surface is sharply marked, with sharply dentate black transverse lines and in cellule 2 of the forewing a large eye-spot, before which the ground-colour forms a whitish or yellowish spot; the eye-spots of the hindwing are all small. Togoland to the Congo. *mandanes.*

**M. kenia** Rogenh. (27 c) agrees in the shape of the wings and in the pencil of the ♂ with *mandanes*, but differs from it in the sharply defined and continuous white subapical band on the upperside of the forewing. German and British East Africa. *kenia.*

**M. auricruda** Btlr. (27 c). The hindwing rounded with undulate distal margin. In the ♂ the hindwing above with hair-pencil in cellule 1c, but without pencil in the apical part of the cell. Forewing above with short, yellowish subapical band, beneath marked almost as in *mandanes*. From Ashanti to Angola and Uganda. *auricruda.*

**M. mesogena** Karsch (27 d). ♂: both wings above unicolorous black-brown without markings and with the distal margin almost entire; distal margin of the forewing nearly straight; the hindwing with 4 hair-pencils, one at the anterior margin of the cell, one in cellule 6, one in the basal part of cellule 1c near the cell and one in the end of the cell near to its hinder angle. The under surface is usually dark black-brown with strongly undulate black transverse lines and two fine black lines at the distal margin; the forewing with three eye-spots (in 1b, 2 and 5), of which the one in cellule 2 is somewhat larger; the hindwing with 7 eye-spots, placed in a row which is curved somewhat anteriorly, the eye-spot in cellule 2 is usually somewhat larger than the others. ♀ unknown to me. Sierra Leone to the southern Congo. *mesogena.*

**M. sandace** Hew. (27 d). Distal margin of both wings slightly undulate, that of the forewing distinctly curved. ♂: wings above dark brown, the forewing in cellule 5 with a distinct black, white-pupilled and yellow-ringed eye-spot and in cellule 2 with an indistinct black spot; the hindwing at the apex of the cell with a deep black mealy spot, covered by a hair-pencil, which also reaches the base of cellules 2 and 3, but without pencil in cellule 1c; the under surface is very similar to that of *mesogena*, but finely striated in the basal half and with straighter and less undulate transverse lines. The ♀ is above lighter and has on the forewing two very sharply prominent eye-spots with yellow rings in cellules 2 and 5. Senegal to the Congo. *sandace.*

**M. technatis** Hew. Wings with the margins almost entire: the forewing with the distal margin slightly curved. ♂: wings above dark brown with no other markings but an indistinct black spot in cellule 2 of the forewing; the hindwing in cellule 1c near the base with a long hair-pencil, which is attached near to vein 1b, but without pencil in the apex of the cell; on the under surface the dark median line, which is distally bordered with violet-grey, is gently curved on the forewing and irregularly sinuous on the hindwing; the forewing with a larger eye-spot in cellule 2 and a smaller one in cellule 5; the hindwing with 7 eye-spots. *technatis.*



of which that in cellule 2 is the largest and that in cellule 3 the next in size; all the eye-spots are white-pupilled and have a yellow, a blackish and a violet-grey ring. The ♀ is above lighter, grey-brown, and has before the apex of the forewing a broad, indistinctly defined whitish subapical band. Liberia to the Congo and Uganda.

*uniformis.*

**M. uniformis** Beth.-Baker. Only the ♂ is described of this species, which is unknown to me. The description runs: "♂. Both wings uniform darkish brown. Primaries with a very small obscure white-pupilled black spot near the apex; secondaries with a blackish-brown tuft of hairs just below the angle of vein 2 between 1b and 2, in addition to the tuft above the cell. Underside: both wings pale ochreous brown: primaries with a large cell-spot faintly outlined: a median obscure line and a distinct postmedian one, the latter palely edged; the subapical spot of the upperside showing through and having a pale yellowish iris; a similar spot, rather larger, between veins 2 and 3, between these are traces of two other similar spots: secondaries with a dark irregular median and postmedian line enclosing a slighter darker area, the postmedian line is palely edged externally; a series of 7 subterminal white-pupilled black spots, with pale yellowish irides, which are edged with darker brown and again with pale obscure ochreous. Expanse 55 mm." Upper Congo at Makala-Beni.

*miriam.*

**M. miriam** F. (27d). Both wings above unicolorous grey-brown without markings (the eye-spots of the under surface, however, show through), in the ♂ with slight violet reflection; forewing with the margins almost entire, hindwing with the distal margin slightly undulate; under surface at least in the basal part with distinct brown transverse striae, median line undulated and distally more or less distinctly margined with white-grey; the eye-spots black, with white pupil and a yellow, a dark brown and a yellow-grey ring; the forewing with a larger eye-spot in cellule 2 and a smaller in cellule 5; the hindwing with 7 eye-spots, of which those in cellules 2 and 3 are larger than the rest and those in cellules 4—6 small and of uniform size. ♂: hindwing above with the usual pencils at the anterior margin of the cell and in cellule 6 and in addition with a long pencil in cellule 1c close to the hindmargin of the cell. Gaboon, Congo and Nyassaland. — In **punctifera** Strand the eye-spots on the under surface are reduced to dots. Ruanda.

*punctifera.*

*dorothea.*

*melusina.*

**M. dorothea** Cr. only differs in the more rounded wings, the darker upper surface and the darker and more sharply marked under surface from the normal widely distributed form. Sierra Leone. — **melusina** F. (27d) nearly agrees with *miriam* in size, shape and the markings of the under surface, but the ground-colour is much lighter, whitish grey. ♂: the forewing above in the middle and the hindwing in the basal part mostly even more relieved with grey than in the figure; hindwing with a light, yellowish pencil at the anterior margin of the cell and usually also with a small, dark pencil in cellule 6; in cellule 1c close to the hindmargin of the cell there are some long blackish hairs, which form a narrow pencil. The ♀ is usually unicolorous grey-brown above, but may also be coloured almost like the ♂ (= ♀ ab. **concolor** Auriv., from Fernando Po). — Sierra Leone to Angola.

*concolor.*

### 3. Subgroup.

The hindwing of the ♂ with only a single hair-pencil, which is attached in the cell close to its anterior margin, but sometimes in the basal part with long, appressed hairs. The forewing or the hindwing in the first four species with a black mealy or velvety spot; in the fifth species the entire basal half of both wings deep velvety black.

*sophrosyne.*

**M. sophrosyne** Plötz (= plötzzi Bartel). ♂: wings above dark brown, at the distal margin and before the apex of the forewing somewhat lighter, forewing in the middle with a large, irregular black velvety spot which covers the proximal part of cellules 2 and 3, as well as the adjoining parts of cellules 1b and 4; on the under surface the basal part is unicolorous dark brown and distally bordered by a slightly darker median line, with violet-grey distal margining; the median line is almost regular, on the forewing distinctly curved and on the hindwing weakly excurved between veins 3 and 5; in the violet-grey, brown-spotted marginal area there are on the forewing 2—3 and on the hindwing 5—6 eye-spots; these are black, white-pupilled and with a yellow and a dark brown ring; the spot in cellule 2 is larger than the rest and of the same size on both wings, the one in cellule 3 is absent and that in cellule 4 of the hindwing is small or absent; the spot in cellule 6 of the hindwing is somewhat larger than the one in cellule 5; but the one in cellule 6 of the forewing much smaller than that in cellule 5. The ♀ is lighter than the ♂. — Cameroons and Congo.

*istaris.*

**M. istaris** Plötz. ♂: the wings above uniform black-brown, not or scarcely lighter at the distal margin and before the apex of the forewing; the forewing near the hinder angle with a large, rounded black velvety spot, chiefly placed in cellule 2; the under surface in the basal part deep, unicolorous black-brown without markings, distally bordered by a black, white-edged median line, the median line is uniform, on the forewing almost straight and on the hindwing scarcely appreciably curved; the forewing with a larger eye-spot in cellule 2 and a small one each in 5 and 6, the hindwing with 7 eye-spots, two in cellule 1c and one each

in 2—6; the one in cellule 2 larger than the rest, which are of almost equal size; all the eye-spots are sharply prominent, black, with white pupil and with a yellow and a brown ring; before the distal margin two dark, undulate lines. ♀ unknown to me. The species is similar to the preceding, but may be at once distinguished by having the velvety spot on the forewing more sharply defined and placed near to the distal margin. Ashanti and Togo.

**M. mollitia** Karsch (= *ansorgei* E. Sharpe) (27 e) is larger than the preceding two. ♂: wings above *mollitia*. velvety black, the forewing with a light yellowish brown subapical band, which is continued at the distal margin to the hinder angle; in this band is placed in cellule 5 a small, black, white-pupilled eye-spot; the hindwing at the distal and inner margins distinctly lighter; the forewing in the basal part of cellules 2 and 3 with a rounded, dull black-grey mealy spot. The under surface is marked almost as in *isturis*, the eye-spots, however, are sometimes better developed, sometimes small and indistinct. The ♀ is unknown to me. — This very easily recognized species is only known from the Congo State, from Ruwenzori and Uganda.

**M. lamani** Auriv. (27<sup>e</sup>). ♂: the wings above unicolorous, dark black-brown, the hindwing with a *lamani*. large, velvety black mealy spot near the hindmargin in cellule 2; on the under surface the unicolorous black-brown basal part is bounded by an almost straight whitish transverse line; the forewing has a large eye-spot in cellule 2, a small one in cellule 5 and a punctiform one in cellule 4 and in cellule 6; the hindwing has 7 eye-spots, of which only the one in cellule 2 is somewhat larger than the others. ♀: wings above lighter brown, the hindwing before the apcx rather broadly grey; the under surface is also lighter and further differs in that the median line on both wings forms a weak, obtuse angle. On the lower Congo at Mukimbungu.

**M. obscura** Auriv. (28 a). ♂: both wings above unicolorous black-brown with slight violet reflection; *obscura*. the forewing at the base and the hindwing almost to the anal angle clothed with long, appressed hairs, these parts consequently appearing almost black; beneath the basal part is unicolorous deep black-brown without gloss, but the distal part somewhat lighter and with strong silky gloss, somewhat inclining to violet; the forewing with a large eye-spot in cellule 2 and a small one in 5 and in 6; the hindwing with 7 eye-spots, of which only the one in cellule 2 is large: the black eye-spots are pupilled with bright bluish white and have an inner brown-yellow and an outer black-brown ring. Strongly recalls *M. martius* on the under surface. The ♀ is unknown. Congo and Ruwenzori.

**M. rhacotis** Hew. ♂: both wings above unicolorous dark brown without eye-spots, at the base. *rhacotis*. especially in cellule 1c of the hindwing, with appressed hairs, before the distal margin a fine, dark undulate line; the under surface almost darker than the upper; median line finely blackish and narrowly margined with violet-grey, on the forewing quite straight, on the hindwing very little curved or nearly straight; the eye-spots are black, white-pupilled, with a narrow yellow, a broader black-brown and a violet-grey ring; they are placed further than usual from the distal margin; the forewing with a larger eye-spot in cellule 2 and a smaller one in 5 and in 6; the hindwing with 7 eye-spots, of which those in cellules 2, 3 and 6 are of equal size and larger than the rest. Old Calabar, Congo and Nyassaland.

#### 4. Subgroup.

The hindwing of the ♂ above always with two hair-pencils, one in the cell close to the costal margin and one in the basal part of cellule 6; in the normal position of the wings both are covered by the hindmargin of the forewing. The forewing almost always with a small, raised, weal-like mealy spot in cellule 1a, close behind vein 1. — The upper surface of the wings always without white markings and the forewing never with sharply defined yellow subapical band.

**M. golo** Auriv. (27 e). Both wings above unicolorous dark brown without markings, in the ♀ somewhat *golo*. lighter than in the ♂: on the under surface the basal part is dark velvety brown without distinct markings and distally almost straight, the median line being only slightly curved on the forewing and nearly straight on the hindwing, this line and the marginal area brown in the type-form; the eye-spots are black, white-pupilled, with a yellow and a black-brown ring; the forewing with a large eye-spot in cellule 2, a small one in 5 and a punctiform in 4 and in 6; the hindwing has 7 eye-spots, of which only the spot in cellule 2 is larger, but the one in cellule 6 not larger than that in cellule 5. ♂: the pencils on the hindwing are light yellowish; the forewing with a small, not raised mealy spot in cellule 1a about at the middle of vein 1. Cameroons, Congo, Uganda. — In **violascens** Auriv., from Gaboon and the Congo, the median line on the *violascens*. under surface is broader and shows, together with the marginal area, a strong violet reflection.

**M. campa** Karsch (27 f). Both wings above unicolorous dark grey-brown without markings, beneath *campa*. with dark brown basal area, which on both wings (on the forewing almost rectangularly) projects strongly distad at vein 4; the forewing with a large eye-spot in cellule 2 and a small one in cellule 5; the hindwing



*baumanni.* with 8 eye-spots, a small punctiform one in cellule 1b, two in cellule 1c and one each in 2—6; the eye-spots are black, white-pupilled, with a grey and a dark brown ring; ground-colour of the marginal area rather dark violet-grey. ♂: the peneils of the hindwing deep black; the mealy spot on the forewing pear-shaped or elliptical, placed at the middle of vein 1a and distinctly raised. Togo. — **baumanni** Karsch (27e) only differs in the lighter, more white-grey marginal area of the under surface and the smaller eye-spots of the hindwing; the marginal area of the forewing more or less yellowish-scaled in cellules 3 and 4. Togo.

*dubia.* **M. dubia** Auriv. (27b). Both wings with the distal margin strongly undulate or dentate. ♂: wings above unicolorous blackish without markings, before the apex of the forewing and at the distal margin a little lighter; beneath unicolorous dark brown to beyond the middle, the dark colour projecting angularly distad, as in the ♀, but on account of the dark ground-colour of the marginal area not so distinctly defined as in the ♀; the eye-spots as in the ♀; hindwing above with a light peneil in the cell and a black one in cellule 6; forewing without mealy spot in cellule 1a. ♀: ground-colour of the upper surface lighter brown, the forewing with yellowish-brown subapical band before the apex, a yellowish spot in cellule 3 and a rounded black eye-spot in 2 and 5; on the under surface the basal part is dark brown and divided by one or two violet-grey transverse lines, distally with angled or conical projections at the veins and especially at vein 4; the marginal area is violet-grey and is ornamented in cellule 4 of the forewing with a conspicuous yellow spot; the forewing has a large eye-spot in cellule 2 and a medium-sized one in cellule 5; the hindwing with 8 eye-spots, a small one in 1b, two in 1c, and one each in 2—6; the spots in cellules 2 and 3 are larger than the rest; the eye-spots are black with white pupils and have a yellow and a dark brown ring. Cameroons. — *dentata*. — **dentata** E. Sharpe is the East African race and differs in having the eye-spot in cellule 3 of the hindwing very small and smaller than the one in cellule 4, the forewing beneath with three small eye-spots before the apex (in cellules 4—6) and above without a spot in cellule 3, the ♂ is above dark brown like the ♀ and not velvety black. British East Africa: Kikuyu, Kavirondo and Uganda.

*cooksoni.* **M. cooksoni** Druce. Wings above dark brown, the forewing with a large black, white-pupilled eye-spot in cellule 2, a smaller one in 5 and a sharply defined yellowish white subapical band, which is widened in cellule 3, but does not reach the distal margin. Beneath both wings, but especially the hindwing, have nearly throughout a fine transverse striation; the basal area of the forewing is black-brown, almost rectangularly bent outwards at vein 4 and adorned with two light transverse lines in the cell; the marginal area is in the middle light yellow without striation and bears a large eye-spot in cellule 2 and a small one in cellule 5 and in cellule 6; the basal area of the hindwing is distally bordered by an undulate and weakly curved line, the marginal area is finely striated all over and encloses 7 small punctiform eye-spots. Rhodesia. — DRUCE does not mention the peneils of the hindwing in his description, hence the systematic position of the species is not quite certain.

*milyas.* **M. milyas** Hew. (27g). ♂: the wings above grey-brown, somewhat lighter at the distal margin of the forewing, in cellule 2 of the forewing with a black eye-spot; the peneils of the hindwing deep black, the forewing with long, narrow mealy spot in cellule 1a, close to vein 1; on the under surface the forewing has 4 dark transverse lines in the cell and the hindwing a dark transverse line across the middle of the cell, the median line is distally bordered with grey-violet, on the forewing almost straight and on the hindwing also straight or somewhat excurved; the eye-spots are black, white-pupilled, with a violet-grey and a blackish ring and are placed on each wing in two groups, each of which is surrounded by a grey-violet, elliptical ring; on the forewing there are in the anterior group a larger eye-spot in cellule 5 and a small indistinct one in each of cellules 4 and 6 and in the posterior group a large eye-spot in cellule 2 and a small, punctiform spot in cellule 3; on the hindwing the posterior group embraces the large eye-spot in cellule 2 and the small ones in 1c and 3 and the anterior group small eye-spots in 4 and 5 and a much larger one in cellule 6, which is almost as large as that in cellule 2. Distributed from Togo to the Congo, the White Nile and Abyssinia.

*pavonis.* **M. pavonis** Btlr. is distinguished from the other species by the clean, sharp markings and colours of the under surface and recalls the *Pararge* species. ♂: upper surface unicolorous grey-brown, the forewing with a black blind eye-spot in cellules 2 and 5; the peneils of the hindwing black; the mealy spot in cellule 1a of the forewing long and narrow, indistinct; the ground-colour of the under surface pure grey all over without striation and scarcely darker in the basal part; the basal area of the forewing with 4 black transverse lines in the cell and on the hindwing with an undulated black transverse line across the middle of the cell, touching the base of veins 2 and 7; the median line on the forewing slightly, on the hindwing strongly undulated; the black, white-pupilled eye-spots have a yellow-grey and a black-brown ring and are surrounded by a grey area; the forewing has two eye-spots, in cellules 2 and 5, the former the larger; the hindwing has 7 eye-spots, two in 1c and one each in 2—6, those in cellules 2 and 6 are of almost the same size and much larger than the rest; the one in cellule 3 is often indistinct or streak-like. From Adamana to Abyssinia.



**M. anisops** Karsch (27 g). ♂: wings above dark brown, the forewing with an eye-spot in cellule 2 and a smaller, indistinct spot in cellule 5; the pencils of the hindwing dark brown; the mealy spot in cellule 1a of the forewing elongate, distally pointed; the under surface with dark brown, unicolorous basal part, the boundary of which on the forewing is feebly curved distally and on the hindwing somewhat irregular; the eye-spots are black, with bluish pupils, and have a yellow, basally red or red-brown, ring and a black-brown one; this species differs from all the other African *Mycalesis* in having the rings partly red; the forewing has three eye-spots, in cellules 2, 5 and 6; the hindwing has 7 eye-spots, of which the one in cellule 2 is much larger than the others and those in 5 and 6 of the same size; the spot in cellule 3 is small, punctiform, or entirely absent. The ♀ is somewhat larger and lighter than the ♂, but otherwise similar. — Cameroons. *anisops.*

**M. ena** Hew. ♂: wings above uniform dark grey-brown, the forewing with two very distinct, black, white-pupilled eye-spots ringed with dull yellow, a larger one in cellule 2 and a small one in cellule 5; the pencils of the hindwing black; the forewing close to vein 1 with a very fine and long, streak-like mealy spot; the under surface finely striated with brown almost all over, the median line of the forewing almost entirely straight and vertical, distally margined with grey, that of the hindwing irregularly undulated and especially in cellules 2 and 6 emarginate; the eye-spots are black, white-pupilled, with a grey-yellow and a dark ring; the forewing has a large eye-spot in cellule 2 and a small or occasionally indistinct one in cellule 5; the hindwing with 7 eye-spots, of which those in cellules 2, 3 and 6 are of equal size and somewhat larger than the rest. The ♀ is somewhat larger, but otherwise similar to the ♂; small eye-spots occasionally occur also in cellules 3, 4 and 6 on the underside of the forewing. Nyassaland and German East Africa. *ena.*  
**kigonserae** form. nov. is the dry-season form and only differs in having the eye-spots small or punctiform; the one in cellule 2 of the forewing, however, appears to be always large. German East Africa. *kigonserae.*

**M. desolata** Btlr. (= *leptoglena* Karsch). Upper surface of the wings grey-brown; forewing in the ♂ with a round, black, non-pupilled spot in cellule 2, in the ♀ in addition with a similar spot in cellule 5; under surface grey-brown, somewhat striated with violet, at the apex speckled with yellowish, for the rest very variable; basal area darker with slightly undulate, fairly straight boundary line, narrowly margined distally with whitish or yellowish; distal area of the forewing with 4 or 5, of the hindwing with 7 small black eye-spots, broadly surrounded with grey, enclosed by brownish ring and so appearing very large, all more or less distinctly white-pupilled; hindwing of the ♂ above at the costal margin glossy with two black pencils. Sierra Leone to Angola and Abyssinia. — **selousi** Trim. is probably only a southern race of *desolata*. ♂: upper surface dark brown-grey with or without black eye-spot in cellule 2 of the forewing; the latter in cellule 1a somewhat before the middle of vein 1 with a broadly oval, raised mealy spot, to which corresponds on the under surface a sharply defined chalk-white spot; the pencils on the upperside of the hindwing yellow-brown; the under surface is distinctly but sparsely covered with small, fine, dark streaks; the eye-spots are small and punctiform without rings or occasionally only represented by the white pupil; forewing with only two eye-spots, of which the one in cellule 5 is often absent. The ♀ is larger and has a more distinct, often white-pupilled eye-spot in cellule 2 on the forewing above. Mashonoland and German East Afrika. *desolata.* *selousi.*

**M. safitza** Hew. is the commonest and best known *Mycalesis* and occurs everywhere on the continent of Africa south of the Sahara. ♂: wings above dark brown; forewing before the apex tinged with yellowish and with two very prominent black, white-pupilled and yellow-ringed eye-spots, a larger one in cellule 2 (this is occasionally absent or indistinct, = ab. **semicoeca** Strand) and a smaller in cellule 5; in cellule 1a at or somewhat before the middle of vein 1 a short and broad, raised mealy spot, which, however, does not occur on the underside as a chalk-white spot; the pencils of the hindwing brown; the basal area of the under surface is dark brown with or without transverse line and distally bounded by an even, nearly straight median line more or less broadly margined with whitish; the eye-spots stand out sharply and are black with white pupils, have a yellow and a dark brown ring and are surrounded by a violet-grey area; the forewing has a large eye-spot in cellule 2, a smaller one in cellule 5 and occasionally also a still smaller in 4 and in 6; the hindwing with 7 eye-spots, of which those in cellules 2, 3 and 6 are larger than the others. The ♀ is larger, has larger eye-spots on the upperside of the forewing and a very distinct median line also on the forewing above. **evenus** Hpff. (27 e) is the dry-season form and has the eye-spots smaller or punctiform or even indistinct — **aethiops** R. & J. differs in having the median line on the forewing bent so as to reach the costal margin vertically and the median line on the hindwing running more irregularly. South Abyssinia. *safitza.* *semicoeca.* *evenus.* *aethiops.*

**M. danckelmanni** Rog. is about the same size as the preceding species and very similar to it, but differs especially in having the median line of the under surface obtusely angled at vein 4 on the forewing and on the hindwing with a ventricose projection distad between veins 3 and 5 (quite as in *fuellborni* [27 g]). ♂: wings above black brown, the forewing broadly lighter before the distal margin and with a larger eye-

*danckelmanni.*



spot in cellule 2 and a smaller in cellule 5; in cellule 1a somewhat beyond the middle of vein 1 with a raised, elliptical mealy spot, which is represented on the under surface by a chalk-white spot: the inner pencil on the hindwing yellowish, the outer yellow-brown; the basal area of the under surface is unicolorous deep black-brown, and projects, as mentioned above, distinctly distad in the middle of both wings: the greater part of the marginal area is whitish or violet-grey and it bears black, white-pupilled eye-spots ringed with yellow and dark brown, two on the forewing and 7 on the hindwing, of which those in cellules 2 and 3 are larger than the others. German East Africa. — In ab. **daresa** Strand the forewing has a small eye-spot also in cellule 6, in ab. **deannulata** Strand, on the contrary, the eye-spot in cellule 5 of the forewing is also absent. Both forms are met with in German East Africa.

*fuelleborni*.

**M. fuelleborni** Bartel (27 g) is nearly allied to the preceding species, but differs from it according to BARTEL in the following point: Distal part of the forewing not so light, the eye-spots smaller and without pupils, hence little conspicuous. The dark median part not so sharply bounded, straight posteriorly. On the hindwing the demarcation between the proximal and the distal part is only very slight, the latter being but little lighter. The hair-pencil at the anterior margin of the cell is weaker and not yellow, but of a smoky-brown colour, the pencil of cellule 6, on the contrary, is essentially stronger, black, not yellow-brownish. Vein 1 of the forewing with elongate light mealy spot at the middle. On the similarly marked under surface the dark, black-brown proximal part differs in having the costal margin of the forewing irrorated with grey; the cell of the forewing is crossed by a grey stripe in the middle. Basal and inner-marginal parts of the hindwing likewise dusted with grey, the latter the more intensively; the former with an indistinct row of light grey spots; the distal bordering of the dark part forms a ventricose projection above the middle. Distal area violet-grey, mixed with yellow and irrorated with grey; the eye-spot in cellule 2 of the forewing is surrounded with brown and in place of the upper spot there is only a white dot. Submarginal line very indistinct, not dentate, on the hindwing it is distinct, but more feebly dentate than in *M. danckelmanni*. Here only the three lower eye-spots are distinct, being black, weakly pupilled with white and ringed with yellowish, but very small; all the other eye-spots are only represented by white dots. German East Africa, on the north side of Lake Nyassa. f. **ocelligera** Strand differs in the well developed eye-spots on the under surface, of which there are 7 on the hindwing. German East Africa.

*campina*.

**M. campina** Auriv. (28 a) is a pretty species, nearly allied to the preceding two, but smaller; expanse 38—44 mm. ♂: wings above uniform dark black-brown without any markings except a not very distinct, round spot in cellule 2 of the forewing, the hindwing somewhat lighter, especially at the distal margin: the pencils of the hindwing brown; the mealy spot on the forewing elongate and placed at the middle of vein 1. On the under surface the basal part is dark black-brown, somewhat lighter on the hindwing; the median line is margined (sometimes very sharply) with whitish and curved almost exactly as in *fuelleborni*, but on the forewing not straight but distinctly incurved between vein 3 and the hindmargin: the marginal area is violet-grey or violet-brown, more or less finely striated, with small, black, white-pupilled eye-spot ringed with yellow-brown; the forewing with an eye-spot in cellule 2 and a punctiform spot in cellule 5; the hindwing with complete eye-spots only in 1c and 2, in 3—6 only with white dots. The ♀ is larger and somewhat lighter and has on the upperside of the forewing before the distal margin, which is again darker, a broad, band-like light patch, in which the black spot of cellule 2 stands out sharply. Mashonaland and Gazaland.

*goetzi*.

**goetzi** Thur. appears to be the rainy-season form and differs in having distinct eye-spots on the under surface where *campina* has only white dots; on the forewing these consist of a large one in cellule 2 and one about half as large in cellule 5; on the hindwing two of fairly equal size in cellules 2 and 6 and a small one each in 3, 4 and 5, besides two in cellules 1c; the basal part of the under surface is velvety violet-black and the distal part flesh-colour, clouded with brown. German East Africa near Lake Nyassa. —

*subapicalis*.

**subapicalis** Auriv. differs from the type-form from Mashonaland only in its somewhat larger size (♂ 40—42; ♀ 45—49 mm.), the much more distinct grey-yellowish patch before the apex on the forewing above, and in having the basal area on the underside of the forewing cut off quite straight distally between the costal margin and vein 4; the eye-spots, as in *campina*, only developed in cellule 2 of the forewing and in cellules 1c and 2 of the hindwing. In the ♀ the large, white-pupilled eye-spots on the upperside of the forewing are very conspicuous. Found on Mt. Kilimanjaro on shady foot-paths in the woods up to 2000 m.

*anynana*.

**M. anynana** Btlr. has in both sexes on the upperside of the forewing two sharply prominent, black, white-pupilled and yellow-ringed eye-spots, a larger one in cellule 2 and a smaller in cellule 5. In the ♂ the mealy spot in cellule 1a of the forewing is placed at the middle of vein 1 and is short and narrow; the pencil in the cell of the hindwing is yellowish and the one in cellule 6 dark. The under surface is more or less distinctly striated or irrorated with brown; the median line begins perpendicularly towards the costal margin of the forewing, is then somewhat distally curved between veins 7 and 4 and from vein 4 to the



inner margin straight or weakly incurved, distally it is more or less broadly bordered with whitish or yellowish; on the hindwing the median line is weakly and irregularly undulated and there also usually light margined, although more narrowly than on the forewing; an inner transverse line across the middle of the cell stands out more or less prominently on both wings. In the marginal area are placed on the forewing two eye-spots, a large one in cellule 2 and a small in cellule 5; the former has a large white pupil, which is placed more or less excentrically, and a ring which is often rust-yellow on the posterior side; the hindwing has 7 eye-spots, which are all small and in cellules 4—6 are occasionally only indicated by white dots, the spot in cellule 2 is always somewhat larger than the rest; in the dry-season form the forewing is more or less broadly red-brown beneath at the distal margin, especially in the ♀. Expanse 35—40 mm. German and British East Africa and on the Island of Johanna in the Comoros. — **socotrana** Btlr. is somewhat smaller, *socotrana*. 34—38 mm., has the ground-colour of the under surface more grey, the eye-spot in cellule 2 of the forewing beneath quite round and those in cellules 2 and 3 of the hindwing of almost equal size. The pupil of the eye-spot in cellule 2 of the hindwing is not excentrically placed. Island of Socotra.

**M. vicaria** Thur. is very similar to the preceding species. The wings above brownish, in the ♀ lighter grey-brown, with two distinct, white-pupilled and yellow-ringed eye-spots on the forewing, a larger in cellule 2 and a smaller in cellule 5. In the ♂ the mealy spot in cellule 1 a of the forewing is larger and more distinct than in *anymana*, distally tapering to a point, almost coniform; the pencil in the cell of the hindwing is yellow-brown and that in cellule 6 blackish. The under surface is yellowish grey or brown-grey, darker in the basal area, not or indistinctly striated; the median line is distally margined with light grey, on the forewing almost straight and on the hindwing somewhat undulated; the eye-spots are as in *anymana*, except that the one in cellule 2 on the forewing is circular and has the pupil in the centre. German East Africa. **neglecta** Thur. is the dry-season form and has the eye-spots on the under surface very small or only represented by white dots. German East Africa. *vicaria*. *neglecta*.

### 5. Subgroup.

♂: as in the fourth subgroup the hindwing above has two hair-pencils near the costal margin, one in the cell and one in cellule 6. The species of the fifth subgroup, however, differ from those of the preceding one in having the basal part of the forewing above either with dense, long hairs or with distinct pencils.

**M. martius** F. (27 f). The wings are short and broad and the distal margin of the forewing more rounded than in the other species; in the ♂ the hindwing is distinctly angled at vein 3. ♂: the wings above very dark black-brown; the forewing before the distal margin a little lighter and with two rounded, blind, black spots in 2 and 5, before the middle with two broad, posteriorly directed hair-pencils, one in the cell and one in cellule 1b; the mealy spot in cellule 1a is broadly rounded and placed before the middle of vein 1, almost directly behind pencil 1b; the pencils of the hindwing are brownish. On the under surface the brown-black area is sharply separated from the violet-grey, somewhat glossy marginal part; in the latter there are on the forewing 2—5 and on the hindwing 7—8 black, white-pupilled yellow-ringed eye-spots, of which the one in cellule 2 on both wings is larger than the others. The ♀ is much lighter above than the ♂, grey-brown with a distinct grey-yellow band and much larger blind eye-spots on the forewing; beneath the marginal part is also much lighter than in the ♂, grey without violet reflection. This easily recognizable species is distributed from Ashanti to Angola, Uganda and German East Africa. *martius*.

**M. vulgaris** Btlr. (27 g). ♂: wings above dark brown, tinged with grey at the apex of the forewing; the forewing with long hairs in the cell and in the basal part of cellule 1b; vein 1 near the base distinctly curved anteriorly and at the posterior side with an elongate, distally pointed mealy spot, which is almost entirely covered by the hairs of cellule 1b; the under surface is finely striated and irrorated with brown, with darker basal area, the median line almost regularly angled or undulate; the eye-spots, two on the forewing and seven on the hindwing, are in the dry-season form all or some of them punctiform, in the rainy-season form, **tolosa** Plötz, although never large, yet fully developed. Sierra Leone to Angola and Uganda. *vulgaris*. *tolosa*.

**M. angulosa** Btlr. (27 g) is very similar to the preceding species, but somewhat lighter; in the ♂ the mealy spot in cellule 1a on the forewing is placed behind the middle of vein 1 and is short, oblong, proximally rounded and distally pointed. *angulosa*.

**M. funebris** is distinguished from all the other species by having the pencil in the cell of the hindwing in the ♂ small and whitish, while the one in cellule 6 is deep black, and attached for a long distance along vein 6, forming a sort of row of bristles. The wings are above deep dark brown, before the apex



of the forewing more or less lighter and in the ♀ with small, white-pupilled and yellow-ringed eye-spots in *funebis*. cellules 2 and 5. — **funebis** Guér. is a pronounced dry-season form in which on the under surface the marginal area at the apex of the forewing and on the hindwing is lighter than the basal area and has distinct *nebulosa*. eye-spots only in cellules 2 and 5 of the forewing and 1c and 2 of the hindwing. Senegal. — **nebulosa** Fldr. (27f) is also a dry-season form, but has small eye-spots in all the cellules on the underside of the hindwing and on both wings a light, violet-brown marginal area, sharply separated from the basal part. Sierra Leone *agrophis*. to Uganda. — **agrophis** Karsch (27f) is the rainy-season form and differs in the complete development of the eye-spots beneath and the darker marginal area on the under surface, which is sometimes not separated off at all from the basal part. Sierra Leone to Gaboon.

## 6. Subgroup.

The only species of this subgroup differs from all others in having on the forewing above a sharply defined, pure yellow subapical band, which extends from the costal margin to vein 3 or 2, becomes gradually narrower posteriorly and is feebly curved. The hindwing of the ♂ above with a long yellow hair-pencil in the cell.

*matuta*. **M. matuta** Karsch (27g). Wings above brown without eye-spots, the forewing in the middle broadly blue-black to the yellow transverse band. The under surface with uniform dark brown basal area, which on the forewing projects angularly distad at vein 4, but on the hindwing is almost straight-edged: in the grey marginal area are placed on the forewing 2 and on the hindwing 7 white-pupilled, brownish-ringed eye-spots. Ruwenzori.

## 7. Subgroup.

The species belonging here differ from all others in having the wings spotted with white above. On the under surface of both wings a broad white transverse band runs between the dark basal area and the eye-spots.

*saussurei*. **M. saussurei** Dew. (27g). The wings above with a common white transverse band, extending from vein 4 or 3 on the forewing to vein 2 on the hindwing and becoming broader posteriorly; the forewing above with distinct, white-pupilled eye-spots in cellules 2 and 5, the hindwing with similar eye-spots in 1c and 2: on the under surface the forewing has 2—4, the hindwing 7 eye-spots. Congo region in the interior: German East Africa; British East Africa: Kavirondo and Uganda.

*aurivillii*. **M. aurivillii** Btlr. is similar to the preceding species, but differs in having the basal part of the wings above blackish, in the forewing having only small white spots in cellules 3 and 4 and only blind, indistinct eye-spots and the hindwing having only a rather large white spot between veins 3 and 6, but no eye-spots; the eye-spots on the under surface almost exactly as in *saussurei*; the species is larger than *saussurei* and has the fringes chequered with white and brown, on the hindwing strongly undulate. In the ♂ the hindwing has only one hair-pencil, the pencil in cellule 6 being absent. German East Africa; Ruanda and Ruwenzori.

The following species are unknown to me and are so incompletely described that it is impossible to arrange them in the above groups or subgroups. I therefore quote them here as an appendix.

*abnormis*. **M. abnormis** Dudgeon differs from all other African species in the elongate hindwing and the uniform dark velvety brown colour of the under surface of both wings, which are unmarked as far as to the small eye-spots. Both wings above dark brown; forewing indistinctly hairy in the cell, before the apex with a light subapical band, which begins near the costal margin, extends to vein 3 and encloses a black spot in cellule 5. Hindwing posteriorly produced and elongated, in the ♂ with a light brown pencil in the cell. On the under surface both wings have a light marginal line and the subapical band of the forewing is extended to the apex; the forewing has two small white-pupilled eye-spots in cellules 2 and 5 and the hindwing similar ones in cellules 1c, 2, 5 and 6. Ashanti, in dense forest.

*erysichton*. **M. erysichton** Ehrmann is of almost the same shape as *sanaos*. Wings above mouse-brown, a little lighter at the inner margin of the hindwing, the forewing with black scales at the hindmargin. The under surface is unicolorous brown from the base to somewhat beyond the apex of the cells, somewhat lighter than above; then follows a sharply defined, irregular, dark brown transverse line from the costal margin of the forewing to the inner margin of the hindwing; in the cell of the forewing there is a dark transverse line; the marginal area is olive-coloured, somewhat mixed with brown; the forewing has a larger eye-spot in cellule 2 and three smaller ones joined together in cellules 4—6; hindwing with 7 eye-spots, of which the one in cellule 2 is the largest; all the eye-spots white-pupilled. Liberia.

*nandina*. **M. nandina** Anson (= *ansorgei* E. sharpe). Shape as in *evadne*. Both wings dark velvety brown, a little lighter towards the distal margin, beneath with the first three-quarters dark velvety brown,

the last quarter lighter brown with a row of eye-spots with grey-brown rings; the forewing with 5, the hindwing with 7 ocelli, of which the first four are the smallest. The hindwing is more produced than usual at the anal angle. British East Africa: Nandi.

## 5. Genus: **Henotesia** Btlr.

The species of this genus have been often regarded as *Mycalesis*, but are distinguished at once from all true *Mycalesis* by the densely hairy eyes. On the continent of Africa only a few species occur, but there are a large number which are peculiar to Madagascar and many others belong to the Indo-Malayan Region\*). The early stages are only known of one species (*narcissus*, see below). The numerous species may be divided into four groups.

### First Group.

The upper surface of the wings at least in cellule 2 of the forewing with distinct eye-spot. Distal margin of the hindwing entire or regularly undulate.

#### A. Species of Continental Africa.

##### 1. Subgroup.

♂: the hindwing above without light spot at the base of the inner margin and without black hair-pencil near the base of vein 1b, but at the costal margin with a pencil in the cell. — The antenna not or only indistinctly ringed with white.

**H. perspicua** Trim. (28 a). Wings above dark grey-brown; the forewing with two black, white-pupilled eye-spots broadly ringed with red-yellow (or grey-yellow), a very large one in cellule 2 and a smaller in cellule 5 (in the ♀ and also in the ♂, ab. **amanica** Strand, there are also sometimes small punctiform ocelli in cellules 3 and 4), the hindwing with 2—4 similar, but small eye-spots in cellules 2—5. at the distal margin lighter, brown-grey with two sharply prominent submarginal lines. On the under surface the basal part is grey-brown, distinctly and finely striated or irrorated with rust-brown and with distinct brown transverse line across the middle of the cell; the marginal area is lighter grey and is separated from the basal part by a uniform, nearly straight dark brown median line distally broadly bordered with whitish or yellowish; the forewing has 2 and the hindwing 7 well developed eye-spots; these are black with white pupils and have an inner yellow and an outer dark brown or rust-coloured ring; the outer ring of the large eye-spot in cellule 2 of the forewing seems to be always rust-brown or rust-yellow; before the distal margin two distinct dark submarginal lines and before the eye-spots of the hindwing an abbreviated, sometimes very broad dark transverse band. Occurs from the Congo to Natal and from there to British East Africa and Abyssinia. — **maevius** Stgr. (28 a) is the dry-season form and only differs on the under surface in having all the eye-spots except the one in cellule 2 of the forewing indistinct or punctiform; on the upper surface the eye-spots are developed as in the type-form. In the same localities as the type-form. — ab. **submaevius** Strand is said to agree above with *maevius* but beneath with the type-form. German East Africa.

**H. victorina** Westw. Very similar to the preceding species, somewhat smaller, above somewhat lighter with smaller eye-spots, but especially distinguished by having the under surface uniform brown-grey, both in the basal and the marginal area without striation and without transverse lines across the cell; the median line, as in *perspicua*, is straight and uniform and distally bordered with whitish, but is narrower than in the latter; at the distal margin two whitish grey lines separated by the outer submarginal lines (the inner dark submarginal line is entirely merged in the ground-colour); the eye-spots have a yellow-grey ring, a grey-brown one like the ground-colour and an outer grey one, on the hindwing interrupted between the eye-spots, which may be regarded as the remains of the grey ground-colour of *perspicua*. Zambesi and German East Africa.

**H. ubenica** Thur. (28 d) is another ally of *perspicua* and only differs in having the median transverse line on the underside of the hindwing not even and entirely straight but weakly undulate and in cellule 4 forming a small projection distad; also the median line of the forewing is not straight, but slightly curved in S-shape; the ground-colour of the under surface is brownish yellow, with dark transverse striation all over; the median line is fawn-coloured, distally margined with yellow: of the eye-spots on the under surface only the one in cellule 2 of the forewing is large, all the rest are small or indistinct; the eye-spots are black, with white pupils and yellow or brown ring, the black part is sprinkled with white scales. German East Africa. — **uncinata** Thur. seems to be the dry-season form; it has a fresh yellow ground-colour on the

\*) On the relationship of *Mycalesis* to *Henotesia*, *Culapa*, etc. cf. FRUHSTORFER, vol. IX, p. 332.



under surface with the eye-spots even smaller and is especially recognizable by having the broad yellow ring of cellule 2 on the forewing above proximally prolonged anteriorly as a hook or streak. German East Africa.

- elisi.* **H. elisi** Karsch (28 a) is above quite similar to *H. perspicua*, but with grey instead of yellow rings to the eye-spots. The under surface is dark grey with dark brown striae and transverse lines; the median line is not distally margined with light and hence on the forewing immediately touches the broad grey-yellow ring of the eye-spot in cellule 2; all the eye-spots well developed, with grey-yellow rings. Togoland. —
- evanida.* **evanida** Thur. is the dry-season form and differs in the small, punctiform or indistinct eye-spots on the underside of the hindwing.
- phaea.* **H. phaea** Karsch (28 b). Wings above grey-brown with very faint dark brown median transverse line and with the eye-spots quite as in *elisi*. Under surface grey with nearly straight dark brown transverse line; the basal area densely irrorated with brown and with distinct transverse line across the middle of the cells: the forewing with four eye-spots, a large one in cellule 2 and a small one each in cellules 4—6, the hindwing with seven very crowded eye-spots, which have white pupils and a grey and a brown ring. Congo.
- teratia.* **H. teratia** Karsch (28 c). Wings above in the basal half yellow-brown, in the distal part predominantly sulphur-yellow; on the forewing the yellow-brown of the basal part is distally bordered by an almost straight dark brown transverse line, which does not quite reach the costal margin and is distally accompanied by a sulphur-yellow transverse band; the marginal area bears two white-pupilled, black eye-spots, surrounded by a light yellow ring, the larger in cellule 2 and a small one in cellule 5: the costal margin and the apex yellow-brown to vein 4; marginal line dark brown. On the hindwing the median line is very slightly curved and the marginal area less light sulphur-yellow than on the forewing, light brown-yellow and anteriorly broadly shaded with brown; the marginal line is dark brown, proximally accompanied first by a fine curved line and then by a thicker brown curved line; four small, widely separated, white-pupilled eye-spots ringed with yellow and brown are placed in cellules 2—5. The wings are beneath yellow, densely irrorated with brown and divided by a nearly straight brown median transverse line, distally accompanied by a pure yellow transverse band: the basal area with a dark transverse line in the middle: the marginal area of the forewing with 2 and that of the hindwing with 7 eye-spots, which are grey-blue with white pupils. Congo and German East Africa.
- simonsii.* **H. simonsii** Btlr. (28 d). This distinct-looking species is regarded by some authors as an extreme dry-season form of *perspicua*. Whether they are correct can only be proved by careful experiments. — The upper surface of both wings is light ochre-yellowish or sand-yellow with the basal part a little darker and separated from the marginal area by an inconspicuous, nearly straight transverse line; the apex of the forewing is tinged with brown and the brown colour is continued as a free submarginal line almost to the posterior angle; the hindwing also has usually a very fine brown submarginal line; the forewing has a black, white-pupilled eye-spot in cellule 2 and a small one in cellule 5, the hindwing has 2 or 3 black dots in cellules (1 c) 2 and 3. The under surface is reddish yellow, densely striated and irrorated with red-brown; the darker basal part is bounded by a straight median line, broadly margined with yellow distally, and is distinctly broader than the marginal area: the eye-spots are small and punctiform or indistinct, only the spot in cellule 2 on the forewing is somewhat larger. Transvaal, Mashonaland, Zambesi and Nyassaland. —
- lacus.* **lacus** Thur. only differs in having the costal margin and apex of the forewing grey-black for a breadth of about 4 mm. and the distal margin for about 2 mm.: the eye-spots are well developed and white-pupilled above and beneath: the hindwing has 7 beneath: the under surface is grey-brown without striation. Nyassaland.
- centralis.* **H. centralis** Auriv. is nearly allied to the preceding species and above recalls *lacus*. Wings above light ochre-yellow or almost straw-yellow: the apex of the forewing very broadly black-brown (about 8 mm.), the black-brown colour continued at the distal margin to the hinder angle in a breadth of 3 mm. and at the costal margin to the base: in cellule 2 a medium-sized, white pupilled eye-spot, which almost touches the dark marginal band, and in cellule 5 a small similar spot; the hindwing with a dark brown marginal band 4 mm. in breadth, indistinctly defined proximally, and two punctiform eye-spots in cellules 2 and 3. The under surface is rust-brown, finely striated with dark brown, and can be distinguished at once from *simonsii* by its having the dark basal part, which is distally cut off straight, not, broader, but almost narrower than the marginal part, the latter being 10—11 mm. in breadth; the eye-spots as in the type-form of *simonsii* small or indistinct. Katanga district in the Congo State.
- haroldi.* **H. haroldi** Druce is unknown to me in nature but seems to be allied to *centralis* and might even be the rainy-season form of it. The forewing above yellowish white, the base, the costal margin, the apex and the distal margin even more broadly black-brown than in *centralis*; the eye-spots are light-ringed and that

in cellule 2 is partly surrounded by the black marginal band; the hindwing yellowish or partly bluish white with broad black-brown marginal band, brown inner margin and basal part and two distinct white-pupilled and light-ringed eye-spots in cellules 2 and 3. On the under surface the basal part is deep black-brown and as in *centralis* scarcely as broad as the marginal part; the latter is also black-brown and separated from the basal area by a broad yellowish white transverse band, which at the hindmargin of the forewing reaches a breadth of 7 mm., but at the costal margin of the forewing and near the anal angle of the hindwing terminates in a point; the forewing has two large eye-spots and the hindwing 7 which touch one another; these are all black, with white pupils and a yellowish, a dark brown and a light grey ring; at the distal margin two light transverse lines. North-West Rhodesia.

**H. ochracea** Lathy (= wellmanni Weym.) (28c) is above very similar to *H. centralis*, but beneath quite different from all the preceding species. The ground-colour of both wings above light ochre-yellow; the costal margin, the apex and the distal margin of the forewing black-brown, at the apex for a breadth of about 8 mm., gradually becoming narrower in both directions, so that the breadth at the base and at the hinder angle is only 2 mm.; the dark marginal band of the forewing is thus considerably narrower than in *centralis* and rather widely separated by the yellow ground-colour from the eye-spot in cellule 2; the eye-spot in cellule 5 is small, but has a white pupil; the hindwing is more or less dusted with brownish at the distal margin, the base and the inner margin. On the under surface of the forewing the median line is entirely absent and the ochre-yellow ground-colour almost reaches the cell in cellules 1b—3; the darkened costal margin, apex and distal margin are almost as broad as above, but much lighter, grey-brown, and with distinct dark transverse striae especially in the cell; the eye-spots in cellules 2 and 5 are formed as above and in addition there are eye-spots in cellule 4 and in cellule 6. The hindwing beneath is entirely light reddish grey-brown and finely striated with brown; the median line is indicated by two brown crescents, with their concavity turned towards the base, one placed at the base of cellule 2, the other near the base of cellules 4 and 5; behind these crescents the ground-colour is sometimes somewhat relieved with yellowish and then follow seven small, white-pupilled, almost punctiform eye-spots. Expanse 48 mm. Angola. *ochracea.*

**H. eliasis** Hew. (28d) differs from all the preceding in having the eye-spots placed close to the first marginal line and only 1—1.5 mm. from the distal margin. Wings above light ochre-yellow, the costal margin and apex of the forewing rather broadly black-brown; at the distal margin of both wings two fine dark lines, the inner more or less widened in the middle of each cellule. Both wings beneath with a distinct, nearly straight, rust-brown transverse line, which forms the distal boundary of the somewhat darker and densely striated basal area; the forewing with six, the hindwing with seven eye-spots, which are nearly all distinct above also; the eye-spots are black with white pupils and have three rings, a yellow, a blackish and a whitish; the eye-spot in cellule 3 of the hindwing is as large as or somewhat larger than the one in cellule 2. Loango, Congo and Angola. *eliasis.*

## 2. Subgroup.

The antenna broadly and sharply ringed with white. The eye-spots placed near the distal margin. — ♂: the hindwing above close to the base of the inner margin with a grey spot, which is posteriorly bounded by a black hair-pencil attached near to the base of vein 1.

**H. peitho** Plötz (28a). Both wings above unicolorous dark black-brown; the forewing with a larger eye-spot in cellule 2 and a smaller in cellule 5, the hindwing at least with one in cellule 2; the eye-spots are black with white pupil and indistinct yellowish ring. The under surface is yellow, especially in the basal part striated with brown and with nearly straight, thick, red-brown transverse line on both wings; before the distal margin, in the eye-spot area, the ground-colour is more or less grey; the forewing has as above two eye-spots in cellules 2 and 5, the hindwing has normally six eye-spots, two in cellule 1c and one each in 2, 4, 5 and 6, of which the one in cellule 2 is always large and that in cellule 5 larger than the rest, which may be very small or indistinct; the eye-spots are white-pupilled and have a thick, inner yellow ring and a fine, outer dark brown one. Expanse 39—40 mm. Gold Coast, Cameroons and Gaboon. — **decira** Plötz only differs in having the median line on the under surface somewhat curved and in the hindwing having beneath an eye-spot in each of cellules 2—6, of which those in cellules 2 and 6 are larger than the others. Gold Coast. *peitho.* *decira.*

**H. nigrescens** Baker is evidently nearly allied to the preceding species and is described as follows: „♂. Both wings deep velvety blackish brown, with small ocellated spots. Primaries with two small subapical intense black spots minutely but distinctly pupilled with white and having red irides which touch each other; a larger similar spot near the termen between veins 2 and 3; secondaries with a similar spot as in the primaries between veins 2 and 3, near the termen, with occasionally a trace of another similar one above it. Underside: both wings tawny ochraceous, closely suffused with fine, deep, rusty, vein-like, wavy lines, terminating to a large extent in the postmedian area by a prominent deep rusty line through both wings. Primaries *nigrescens.*



with a broad greyish subterminal area in which the white-pupilled black spots show through, the upper two having a single ochreous iris, the lower one with a very broad ochreous iris with a dark outer edging: secondaries with a rusty median transverse line and a curved series of seven or eight ocellated spots as in the forewings. Expanse 46 mm. Hab. Makala, May and June 1906."

## B. Species from Madagascar or Mauritius.

### 3. Subgroup.

The wings above dark brown to black-brown, at most somewhat yellow round the eye-spot in cellule 2 of the forewing.

*anganavo.*

**H. anganavo** *Ward*. The forewing above with a small eye-spot in cellule 5 and in cellule 2 a large one, broadly ringed with red-yellow, placed behind the middle of the cellule near the distal margin: the hindwing above only with a small eye-spot in cellule 2 near the distal margin. The under surface is red-brown, striated all over with brown; the basal part is somewhat darker on both wings, is sharply but somewhat irregularly bounded distally and has a ventricose projection in cellule 4: in the marginal area there are only the same eye-spots as above; these are here ringed with yellow. Expanse 43 mm. Madagascar.

*exocellata.*

**H. exocellata** *Mab*. The forewing above with a small, white-pupilled eye-spot in cellule 5 and in cellule 2 a somewhat larger one, indistinctly margined with yellow, placed almost in the middle of the cellule; the hindwing above without eye-spots. Under surface with dark grey ground-colour, striated with brown; the basal area darker than the marginal and irregularly bounded distally; the under surface only in cellule 2 of the forewing with a true, yellow-ringed eye-spot, the rest of the eye-spots replaced by bluish white dots, of which 5 are present on the forewing and 7—8 on the hindwing. Madagascar.

*strato.*

**H. strato** *Mab*. The wings above black, the forewing in the middle and the hindwing all over with black-blue reflection; the forewing with a white dot in cellule 5 and a white-pupilled eye-spot in the middle of cellule 2 and the hindwing with a similar, but smaller eye-spot in cellule 2. The forewing beneath in the middle black with the marginal area reddish grey, striated with black and the eye-spots as above. The hindwing beneath with dentate median line, distally margined with red-brown, and in cellule 2 with an eye-spot with light yellow bordering, in the other cellules at most with whitish dots: the base and the inner margin striated with bluish grey. ♂: forewing beneath with a glossy white spot at the inner margin, hindwing above with a whitish hair-pencil at the anterior margin of the cell. Expanse 40 mm. Madagascar.

*andravahana.*

**H. andravahana** *Mab*. The wings above in the ♂ black-brown to blackish, in the ♀ grey-brown; the forewing above with only one eye-spot, which is bordered with yellow or red-yellow and is placed in the middle of cellule 2: the hindwing above with a small or punctiform ocellus in cellule 2. The under surface is dark brown, marbled with red-brown and grey; on the forewing the boundary between the basal and marginal areas is distinct, a lighter spot is usually placed at the middle of the costal margin and a red-brown one before the apex, a small, white-pupilled eye-spot in cellule 5 and a larger one in cellule 2; the hindwing has an indistinct, dark median line, proximally dentate in cellule 2, distally bordered by a more or less broad and distinct whitish transverse band; this transverse band reaches neither the costal nor the inner margin and is sometimes more or less effaced by small brown striae: in cellule 2 a medium-sized black, white-pupilled eye-spot, broadly margined with red-brown, otherwise at most small white dots instead of the eye-spots. Madagascar. — *ab. marmorata* *ab. nov.* is darker and has no white transverse band on the underside of the hindwing. Madagascar.

*fuliginosa.*

**H. fuliginosa** *Mab*. is above very similar to the preceding species and only differs in having the distal margin of the forewing produced obtusely at the extremity of vein 4. The under surface is black-brown with small blackish transverse striae, the ground-colour becomes gradually lighter distad without any sharp dividing line; on each wing only an eye-spot in cellule 2. Madagascar.

*bicristata.*

**H. bicristata** *Mab*. The wings above as in the two last-described species dark brown with an eye-spot in cellule 2: it differs from *fuliginosa* in having the distal margin of the forewing quite evenly curved and that of the hindwing distinctly undulate. On the under surface the larger basal part is blackish and separated from the grey marginal area by a somewhat curved, undulate, light-edged median line; the forewing has a small eye-spot in cellule 5 and one in cellule 2 a little larger; the hindwing a medium-sized ocellus in cellule 2 and often also a small one in cellule 1c. In the ♂ the hindwing has above in addition to the pencil in the cell one attached to the base of vein 2. Madagascar.

**H. strigula** Mab. (28b). Wings above black-brown; the forewing with a small, white-pupilled eye-spot in cellule 5 and a large one, broadly margined with yellow, in the middle of cellule 2; the hindwing with a small eye-spot in cellule 2 and at the apex of the cell in cellule 3 or 4 some yellow scales. The under surface is light yellowish grey, irrorated with brown, and has a rust-coloured median line, which on the forewing is curved in S-shape, on the hindwing but little irregular, almost straight: a similar proximal transverse line also stands out very distinctly; the eye-spots are placed as above, but smaller. Madagascar. — **subsimilis** Btlr. is quite similar above, but differs beneath in having the ground-colour more grey, in the distinct transverse lines in the cell of the forewing and especially in the irregular transverse line of the hindwing, which is strongly incurved in cellule 2. Madagascar. *strigula.*  
*subsimilis.*

**H. angulifascia** Btlr. is very similar to the preceding species, but has on the upper surface a larger and more distinct eye-spot in cellule 2 of the hindwing and differs beneath in that the median line on both wings has a strong distad projection at vein 4 and at the costal margin of the forewing and on the hindwing throughout its entire length is distally bordered with light grey or grey-yellowish. Madagascar. *angulifascia*

**H. parva** Btlr. differs from the preceding in having the distal margin of the hindwing between veins 4 and 6 quite straight or slightly emarginate, so that a small angle is formed at vein 4. The wings above black-brown; the forewing with a small eye-spot in cellule 5 and a larger one in cellule 2, the ring of which is sometimes so thick and irregular that it forms a yellow spot; the hindwing with a small spot in cellule 2. The under surface is reddish brown with small brown striae and darker basal area; the median line of the forewing in cellule 2 deeply bent basal, passing round the yellow ring of the eye-spot; the median line of the hindwing projecting obtusely in cellule 4; the marginal area proximally lighter, more grey, at the distal margin darker again; the eye-spot in cellule 2 of the forewing large, that in cellule 2 of the hindwing small and without ring, all the others only represented by white dots. Madagascar. *parva.*

**H. iboina** Ward is above black-brown with the eye-spots as in the preceding species; the distal margin of the hindwing is uniformly curved and undulate, just before it runs a thick, sharply prominent, blackish line; the distal margin of the forewing nearly straight. The under surface is brown-grey with the basal area darker and striated with blackish; the median line of the forewing is blackish, deeply bent in S-shape, and borders proximally the thick yellow ring of the eye-spot in cellule 2; the median line of the hindwing is weakly incurved between veins 2 and 4, but otherwise fairly straight: the eye-spot in cellule 2 of the hindwing is small and has a light yellow ring, other eye-spots are only indicated by white dots. Madagascar. *iboina.*

**H. difficilis** Mab. only differs from *iboina* in having the median line of the forewing absent and that of the hindwing strongly projecting distad at vein 4 and then deeply incurved (forming a semicircle) between veins 4 and 2; the eye-spots are larger than in *iboina* and the white dots surrounded by brown rings. Madagascar. *difficilis.*

**H. vola** Ward is black-brown above, the forewing with a large black, white-pupilled eye-spot bordered with red-yellow in or somewhat before the middle of cellule 2 and a small spot in cellule 5; the hindwing with a small eye-spot in the middle of cellule 3. Both wings beneath are uniform blackish to the distal margin, but about 4 mm. from the margin are bisected by a broad, straight, sharply defined, common, whitish yellow transverse streak; the forewing has only one eye-spot, which is placed in cellule 2 just proximally to the transverse streak, and the hindwing only one small ocellus, placed in cellule 6 proximally to the transverse streak. In these markings on the under surface *vola* differs from all the other Ethiopian species of the genus. In the forests of North Madagascar. *vola.*

**H. ankova** Ward is smaller than the preceding species, only measuring 36—38 mm. Wings above black-brown; the forewing with a large, black, white-pupilled eye-spot with thick red-yellow border in cellule 2 and a smaller similar spot in cellule 5; the hindwing above with two eye-spots of equal size in cellules 2 and 3, and sometimes also a punctiform eye-spot in cellule 4. The under surface is grey, finely irrorated and striated with brown; the median line is rust-coloured and forms on both wings almost a right angle in cellule 4; the eye-spot in cellule 2 of the forewing is surrounded by a thick, somewhat irregular orange-yellow ring; the other eye-spots are very small or only indicated by white dots. Madagascar. — ab. **turbata** Btlr. only differs in having the median line of the hindwing merely dentate, not sharply angled, and in the hindwing having three eye-spots beneath also. Madagascar. — **cowani** Btlr. (? 28b) is probably also only a form of *ankova*, not differing except in having the basal area of the under surface much darker than the light grey distal area and in the hindwing having beneath distinct eye-spots in cellules 2, 3 and 6. Madagascar. *ankova.*  
*turbata.*  
*cowani.*

#### 4. Subgroup.

The wings above in the middle, at least in the basal part of cellules 2 and 3 on the forewing and 3—5 on the hindwing, are for the most part red-brown to red-yellow. The forewing always with an eye-spot in cellule 2, placed beyond the middle of the cellule.



*narcissus.* **H. narcissus** is distinguished by having both wings above more or less extended red-yellow in the middle, but bordered all round with black-brown; the red-yellow discal area of the forewing is divided by a brown transverse line into a darker proximal and a lighter distal part, in which latter is placed the eye-spot of cellule 2; the hindwing has on the upperside two eye-spots in cellules 2 and 3. — **narcissus** *F.* (28c). The black-brown hindmarginal stripe on the forewing above is about two mm. in breadth and sharply defined; the yellow discal area covers cellules 2 and 3 (except at the distal margin) and forms a narrow stripe at the hindmargin of the cell and along the posterior side of vein 2; on the hindwing only the basal part of cellules (2) 3—5 is more or less broadly yellow; on the under surface the black, white-pupilled eye-spot of cellule 2 is placed in a thick yellow ring, but has no outer reddish ring; the median line on the underside of the hindwing is very irregularly lobed and incised. Mauritius and Bourbon. The eggs are light yellow and are spherical with shallow pitting. The larva lives on bamboo and when full-grown is light reddish-brown mixed with greenish and with darker head; the chain-like dorsal line is anteriorly greenish, posteriorly brown; the undulate subdorsal line and straight lateral line are light-brown; spiracles black; the body bears very short, fine hairs. The pupa is of the normal Satyrid shape and is green with some straight black streaks at the anterior end. — **fraterna** *Btlr.* (28b) is the form occurring on Madagascar and only differs in having the eye-spot in cellule 2 of the forewing beneath surrounded first by a yellow and then by a red-brown, posteriorly much thickened ring and the median line on the hindwing beneath nearly even, only slightly sinuous; the eye-spots on the underside of the hindwing are sometimes well developed, sometimes only punctiform or absent. — **maeva** *Mab.* only differs from *fraterna* in having the yellow colour on the upperside of both wings much more extended; on the forewing it nearly reaches the hindmargin, which is only narrowly and indistinctly brown, and covers almost the whole of the cell; on the hindwing it extends into cellule 1c and the cell. Madagascar.

*menamena.* **H. menamena** *Mab.* The forewing above orange-yellow, at the base brownish yellow, the apex rather broadly and the distal margin more narrowly black-brown, in cellule 2 close to the distal margin a small, black, white-pupilled eye-spot bordered with light yellow; the hindwing above entirely orange-yellow, only at the base somewhat brown and at the distal margin with a brownish transverse line; close to this are placed 5 or 6 white dots, surrounded by a fine brown, a yellow, and quite outside again by a fine brown ring. Both wings beneath pure orange-yellow without striation, but with three yellow-brown or somewhat reddish transverse lines, of which the inner two are almost straight and the third is placed near to the eye-spots and curved or undulate; the forewing has eye-spots in 1b, 2, 4 and 5 and the hindwing seven, of which those in cellules 2 and 3 are a little larger. Madagascar.

*ankaratra.* **H. ankaratra** *Ward* (28c). Both wings above red-brown, costal and distal margins narrowly black-brown (about 2 mm. in breadth); each wing with two black, white-pupilled eye-spots; those on the forewing in cellules 2 and 5, on the hindwing in 2 and 3. Forewing beneath in the posterior half red-brown to the middle of the cell and to vein 3 or 4, otherwise dark grey, with blackish transverse striae; hindwing beneath black-grey with dense blackish transverse striae; the eye-spots on the under surface with yellow rings, the hindwing beneath with seven eye-spots, of which only those in cellules 2 and 3 are somewhat larger and stand out sharply. Madagascar.

### Second Group.

The wings above with an eye-spot at least in cellule 2 of the forewing. Distal margin of the hindwing with 2 or 3 teeth or small, short tails at the extremities of veins 2, 3 and 4.

*masoura.* **H. masoura** *Hew.* is a very distinct and aberrant species. Both wings above and beneath white; the forewing suffused with yellowish at the end of the cell; its costal margin and apex above very narrowly black; beneath with black transverse striation, above in cellule 2 beyond the middle with a small blackish ring with dark central dot; distal margin of the forewing strongly and irregularly undulate. The hindwing at the extremity of veins 2 to 4 with very sharp teeth or small, short tails, of almost uniform length, beneath at the base and the inner margin striated with black and with 6 black, white-pupilled eye-spots, two in cellule 1c and one each in cellules 2, 4, 5 and 6; the last three placed in a line at almost a right angle with the rest. Interior of Madagascar. 60—75 mm.

*benacus.* **H. benacus** *Mab.* Distal margin of the forewing undulate, of the hindwing shortly toothed at the extremities of veins 2—4. The wings above with a light grey-yellow ground-colour; the forewing at the costal margin, the apex, the distal and inner margins blackish in almost exactly the same width as in *narcissus*, the light discal area also as in *narcissus* divided by a dark transverse line into an inner, slightly darker part which reaches the base, and an outer part in which is placed the black, white-pupilled eye-spot. The hind-

wing above at the costal margin broadly blackish, at the inner and distal margins irregularly suffused with dark grey and with two eye-spots in cellules 2 and 3. The under surface is light whitish yellow, irregularly and finely irrorated with brown, and bears an irregularly sinuate brown median line, projecting distad at vein 4, thickened in places and on the forewing forming a large dark spot at the end of the cell: the eye-spots are all small or punctiform. Madagascar.

**H. antahala** *Ward* (28d). Wings above unicolorous black-grey; the forewing with a white-pupilled and yellowish-bordered eye-spot in the middle of cellule 2; the hindwing shortly toothed at the extremities of veins 2—4 and with 2 or 3 small eye-spots in cellules 2—4. The under surface has the ground-colour white; the basal area is bounded by a sinuous dark brown median line and is shaded with rather dense, dark brown transverse striae also in the anterior part of the distal area of the forewing: forewing with two eye-spots in cellules 2 and 5, hindwing with 6, the one in cellule 6 being the largest and of the same size as that in cellule 2 of the forewing, those in cellules 2 and 3 but little smaller; the eye-spots all stand out very sharply against the white ground, have white pupils, a thick red-yellow inner ring and a fine black-brown outer one: before the distal margin on both wings two black lines. Madagascar. *antahala.*

**H. avelona** *Ward* (28e). Forewing with the distal margin entire and almost straight, hindwing with two teeth or lobes of the same size at the ends of veins 2 and 3, but at vein 4 not or only much more weakly toothed. The hindwing on both surfaces without eye-spots; the forewing as usual with two eye-spots, of which that in cellule 2 is large and that in cellule 5 very small. Both wings above dark brown, the hindwing broadly grey at the distal margin. Both wings beneath brown-grey finely irrorated with red-brown; the red-brown median line is nearly straight from the costal margin of the forewing to vein 2 of the hindwing and distally more or less broadly margined with yellow: at the base of the teeth on the hindwing are placed on the under surface triangular black-brown spots, proximally bordered by a bluish transverse line. Madagascar. *avelona.*

**H. parvidens** *Mab.* agrees in shape and markings with the preceding species and only differs in having the teeth on the hindwing shorter and broader and adorned on both surfaces with a triangular dark red spot: the under surface is much darker, with denser striation and without light bordering to the median line; the blue transverse line before the distal margin of the hindwing is also entirely absent. Madagascar. *parvidens.*

**H. ankoma** *Mab.* (28d). Distal margin of the forewing undulate and at vein 5 distinctly angled; the hindwing shortly toothed at veins 2—4; the tooth at vein 4 somewhat longer than those at veins 2 and 3. Both wings above unicolorous deep black-brown, the forewing in cellule 2 with a black, blue-pupilled eye-spot. The under surface is dark violet-brown densely marbled with brown, in the marginal area lighter and more violet; the forewing with two, the hindwing with 6 or 7 eye-spots, of which those in cellules 2 and 6 are larger and placed further from the distal margin than the rest. Madagascar. *ankoma.*

### Third Group.

Both wings above almost black with blue reflection and entirely without eye-spots. Distal margin of both wings entire; that of the forewing straight or only slightly curved. The species of this group are little known and very much alike, so that they can only be distinguished by trifling underside characters. Whether these distinguishing marks are really constant can only be decided by comparing a number of examples. All the species come from the primeval forests of Madagascar and measure 42—47 mm.

**H. cingulina** *Mab.* Both wings beneath with a yellowish-bordered eye-spot in cellule 2 and with yellowish-margined median line, but without white dots. Madagascar. *cingulina.*

**H. perdita** *Btlr.* Both wings beneath with an eye-spot in cellule 2; the hindwing with white dots between the costal margin and the eye-spot. Madagascar. *perdita.*

**H. wardi** *Mab.* Forewing beneath without eye-spot in cellule 2. Both wings beneath uniform brown-black to the distal margin; the hindwing in cellule 2 with a very small eye-spot, placed only 2 mm. from the distal margin; in the other cellules only with white dots. Madagascar. *wardi.*

**H. narova** *Mab.* Forewing without eye-spot in cellule 2; the eye-spot in cellule 2 of the hindwing is placed 3 mm. from the distal margin. The wings beneath sprinkled with ochre-yellow scales at least in the basal part. Madagascar. *narova.*



- andrivola*. **H. andrivola** Mab. Forewing without eye-spot in cellule 2: the eye-spot in cellule 2 of the hindwing is placed 3 mm. from the distal margin. The wings beneath without ochre-yellow scales. Forewing beneath distinctly black-blue in the middle. The eye-spot in cellule 2 of the hindwing small; the black median line distinct and sharply dentate. Madagascar.
- masikora*. **H. masikora** Mab. only differs from the preceding species in having the forewing beneath scarcely black-blue in the middle, the median line of the hindwing rust-brown and very indistinct, and in the presence of an eye-spot in cellule 5 of the forewing. Madagascar.
- passandava*. **H. passandava** Ward. Forewing beneath without eye-spots, in the middle distinctly black-blue. Hindwing with large eye-spot in cellule 2, placed 3 mm. from the distal margin, and with very indistinct median line. Madagascar.

#### Fourth Group.

As in the species of the preceding group, the eye-spots on the upper surface are here also entirely absent. The distal margin of both wings is strongly undulate or almost lobed.

- paradoxa*. **H. paradoxa** Mab. (28 e). In this rare species the wings are black-brown above with the fringes chequered with white: the hindwing is unicolorous, but the forewing has a very large, pure white hind-marginal spot, which reaches the base and extends to vein 3 or somewhat into cellule 3, covering also the posterior half of the cell; it is separated from the termen by a marginal band 3—4 mm. in breadth. On the under surface of the forewing the white basal colouring is extended nearly to the costal margin, but is there marked with small black transverse striae, while at the apex the black colour is marbled with white dots and striae: small indistinct eye-spots in cellules 4—6. The under surface of the hindwing has the ground-colour white, but covered all over with small black striae, at the distal margin so densely that the light ground-colour is in places completely covered; distinct, black, white-pupilled and light-ringed eye-spots in cellules 2—4 and 6. Madagascar.

#### 6. Genus: **Heteropsis** Westw.

This genus only differs from *Henotesia* in the sharp, falcate, but little curved apex of the forewing. The eyes are hairy as in *Henotesia*.

In the ♂ the hindwing has above not only a pencil in the cell, but also a pencil-like clothing of hair before the middle of vein 1c.

- drepana*. **H. drepana** Dbl. & Hew. (28 e). In the ♂ the upper surface is unicolorous black-brown with a white-pupilled eye-spot in cellule 2 of the forewing, the underside black-grey with brown, somewhat irregularly distributed transverse striae and white dots instead of the eye-spots. In the ♀ the wings have the ground-colour light straw-yellow on both surfaces; the forewing above has a black apical spot, sharply defined proximally and marked with two white striae, and continued posteriorly as a black-brown submarginal band nearly to the hindmargin; in cellule 2 is placed a large black, white-pupilled eye-spot. The under surface, as in the ♂, is striated and irrorated with brown. Madagascar.

#### Pararge Group.

Of the principal veins of the forewing two at most are inflated at the base. The eyes are hairy and veins 10 and 11 of the forewing arise free from the anterior margin of the cell. The group embraces four Ethiopian genera, which can be easily distinguished by means of the following synopsis.

- A. The lower median vein and vein 12 of the forewing distinctly inflated at the base. 7. *Pararge*.
- B. None of the veins of the forewing inflated at the base; vein 12 only somewhat thickened.
  1. Hindwing tailed at veins 2 and 4. Antennal club broad and sharply defined. 8. *Aphysoneura*.
  2. Hindwing without tail-like appendages and with the distal margin uniformly rounded.
    - a. Veins 3 and 4 of the hindwing from a point or short-stalked. Forewing above without eye-spots. 9. *Meneris*.
    - b. Vein 3 of the hindwing arising before the posterior angle of the cell. Forewing before the apex with two spots in cellules 5 and 6, often united into a bi-pupilled eye-spot. 10. *Leptoneura*.

### 7. Genus: **Pararge** Hbn.

The genus *Pararge* properly belongs to the Palearctic Region and only extends into the eastern part of the Ethiopian in a single species. With regard to the generic distinguishing characters and the early stages it is sufficient to refer to vol. I, p. 133. In working out the Indo-Australian fauna FRUHSTORFER, following a different nomenclature, calls the few species which have reached the Indian Region by the generic name *Satyrus* Latr. (vol. IX, p. 310).

**P. maderakel** Guér. (28f) resembles the European species *maera* and *hiera*; the wings above grey-brown: the forewing above in cellule 5 with a large, black, white-pupilled and yellow-bordered eye-spot and before this a yellow transverse line between veins 3 and 7, two dark transverse lines in the cell and another before the distal margin; the hindwing above with three eye-spots ringed with grey-yellow in cellules 2—4, the one in cellule 3 the largest. The forewing beneath is marked almost as above, except that the yellow transverse streak before the eye-spot is widened posteriorly into a more or less distinct grey-yellow transverse band. The hindwing beneath is black-grey with 2 or 3 fine, sinuous, black transverse lines in the basal part and seven eye-spots, of which two are placed in cellule 1c and one each in cellules 2—6; the eye-spots are black, with white pupils, and have 4 fine rings, the first and third light, grey or yellowish, and the others blackish; before the distal margin two undulate dark lines. Abyssinia and northern Somaliland. *maderakel.*

### 8. Genus: **Aphysoneura** Karsch.

Forewing with the costal margin moderately curved, the distal margin slightly undulate, fairly straight, and the hindmargin straight. The cell reaches the middle of the wing. Hindwing with the distal margin very strongly undulate, at vein 2 with an obtuse lobe, at vein 4 produced into a sharp point. The postcostal vein is short and curved distad; veins 3 and 4 from the posterior angle of the cell or short-stalked. — This aberrant genus is only represented by a single species and is peculiar to Africa. The early stages are not known.

**A. pigmentaria** Karsch (28e) has the ground-colour of both wings whitish-yellow. The forewing above has the apical part black, irregularly defined proximally, extending from somewhat before the middle of the costal margin to the hinder angle and enclosing 3 or 4 light submarginal spots in cellules 3, 4, 6 and 7. The hindwing with blackish marginal band, which at vein 5 is only about 2 mm. in breadth, but is widened anteriorly and posteriorly, so that at the anal angle it has a breadth of 6 mm. The forewing beneath is coloured and marked almost as above, but has two black transverse spots in the basal part of the cell and a distinct eye-spot in cellule 5, surrounded by a light and a dark ring. The basal part of the hindwing beneath is almost completely covered with dark brown spots and sharply dentate transverse lines, only leaving the white ground-colour clear in the basal part of cellules 3 and 4; the hindwing has 7 very large eye-spots with yellow and dark rings, the one in cellule 4 smaller than the rest. Nyassaland, German and British East Africa. *pigmentaria.*

### 9. Genus: **Meneris** Westw.

The wings are large and broad; the forewing above bears two transverse rows of sharply prominent light spots, but no eye-spots or rarely an indistinct one in cellule 5; the hindwing, on the other hand, has on each surface a transverse row of large eye-spots. Distal margin of the hindwing undulate. Antenna with irregularly rounded club, only gradually thickening. — Larva thick, spindle-shaped, with two small points at the anal end; the surface finely haired. Pupa strongly built, with rounded sides; the wing-cases are very protuberant and the dorsum is deeply constricted between thorax and abdomen; the anal point is long and slender. — The genus only occurs in South Africa and consists of three large and strikingly coloured species.

**M. tulbaghia** L. (29e) is one of the largest and most beautiful of all the known Satyrids and was described by LINNÉ from specimens sent him by the then governor of Cape Colony, TULLBACH. The wings are above very dark chocolate-brown; the forewing has behind the middle two transverse rows of large orange-yellow spots, the proximal row interrupted in cellule 4, and the hindwing a similarly coloured, sharply defined transverse band immediately behind the apex of the cell; in the ♀ the cell of the forewing has a yellow transverse spot somewhat before its apex; behind the transverse band the hindwing has 4 or 5 large, black, white-pupilled eye-spots, more or less mixed with blue scales and with yellowish rings, in cellules 1c—3 (4) and 5. The under surface has a lighter, grey-brown ground-colour and the markings of the upper surface are here light yellow or whitish yellow and often bordered with black; the cell of the forewing also in the ♂ with light transverse spot before the apex, the basal part of the hindwing with dentate, black transverse lines; the eye-spots of the hindwing are larger and have a black, a yellow and again a black ring; the first *tulbaghia.*



three, in cellules 3, 5 and 6, are covered in the middle with strongly glossy, opalescent scales. — Larva pale bluish green with black dorsal line: head chestnut-brown: spiracles with black rings. — Pupa semi-transparent, whitish with numerous small black markings. — Occurs in Cape Colony, Natal and the Transvaal.

*indosa.*

**M. indosa** Trim. (29e) is smaller than *tullbaghia*, 60—65 mm., and has shorter antenna. The forewing above is black-brown, suffused with yellowish in the basal part: the spots are pure white, smaller and more irregularly arranged, the proximal row has no spots in 1a and 1b: the hindwing above ochre-yellow with a black-brown marginal band 4 mm. in breadth and 4 or 5 black, white-pupilled eye-spots in cellules 1c—3, 5 (and 6) close to the inner edge of the marginal band. Under surface of the forewing black-brown, at the base grey, with white spots as above and in addition some spots in the cell and an eye-spot in cellule 5. Hindwing beneath violet-brown with several black transverse lines in the basal part and 5 or 6 yellow-bordered eye-spots. Hitherto only met with in Natal and the Transvaal.

*dendrophilus.*

**M. dendrophilus** Trim. (29e) is very similar to the preceding species, but has the upper surface of the forewing lighter, at the base distinctly yellow-brown, with yellowish, not pure white spots; the hindwing above yellow-brown with 7 or 8 eye-spots: the marginal band proximally blackish, distally grey-brown: the under surface coloured and marked almost entirely as in *indosa*. Cape Colony and Kaffirland.

### 10. Genus: **Leptoneura** Wallgr.

Medium-sized. *Erebia*-like Satyrids with 2—3 eye-spots, often confluent, before the apex of the forewing and several eye-spots on the hindwing. Veins 7—9 of the forewing on a common stalk from the apex. 10 and 11 free from the anterior margin of the cell; the transverse veins of both wings nearly straight: the precostal vein of the hindwing nearly straight and directed towards the base: vein 3 of the hindwing arises before the hinder angle of the cell. — Larva short and thick with large head and short anal points: the surface adorned with very short setae. — Pupa thick and cylindrical with the anterior end obtusely rounded. — The genus embraces 8 described species, of which 7 are found only in South Africa: the eighth also occurs on Madagascar.

#### Synopsis of the Species.

- A. Club of the antenna elongate, gradually thickened, irregularly rounded and spindle-shaped. Forewing behind the middle with a light transverse band, continuous at least at the costal margin.
  - a. Forewing above with 5 eye-spots of about equal size in cellules 2—6. *L. jansei.*
  - b. Forewing above with only 2 or 3 eye-spots, placed in cellules (4), 5 and 6.
    - \* The eye-spots of the forewing placed immediately at the distal side of the light transverse band.
      - 1. The transverse band composed of whitish spots. *L. bowkeri.*
      - 2. The transverse band composed of yellow-red spots. *L. dingana.*
    - \*\* The eye-spots of the forewing separated from the light transverse band by a narrow interspace and accompanied distally by 3 or 4 light yellow spots.
      - 1. Forewing with 3 well developed eye-spots, which are bordered distally by a broad light yellow submarginal band. *L. orylus.*
      - 2. Forewing with only two well developed eye-spots, which are distally only narrowly bordered with yellow. *L. clytus.*
- B. Club of the antenna short and broad, flattened and sharply defined.
  - a. Club of the antenna transversely cut off at the tip. Forewing with a light transverse band beyond the middle of the costal margin. Veins on the underside of the forewing white. — Subgenus *Torynesis* Btlr. *L. mintha.*
  - b. Club of the antenna rounded at the tip. Forewing without light transverse band. — Subgenus *Tarsocera* Btlr.
    - 1. Larger, 42—46 mm., and somewhat lighter. *L. cassus.*
    - 2. Smaller, about 35 mm., and darker. *L. cassina.*

*jansei.*

**L. jansei** Swierstra. Wings above dark brown, at the distal margin lighter, grey; each with 5 black, white-pupilled and yellow-bordered eye-spots, which on the forewing are placed in cellules 2—6 and are basally accompanied by a row of light yellow spots. The under surface with black transverse lines in the basal part and on the hindwing with two eye-spots shortly behind the middle of the costal margin in cellules 6 and 7, otherwise marked almost as above. Transvaal.

*bowkeri.*

**L. bowkeri** Trim. Wings above black-brown: the forewing with a strongly curved submarginal row of 6 white (♂) or 5 reddish (♀) spots in cellules 2—6 (and 9); in the ♂ there is a small eye-spot in cellule 6 close to the spot in this cellule and in the ♀ 2—3 similar eye-spots are present. Hindwing above with 5 or

6 eye-spots ringed with red-yellow. The under surface marked almost as the upper, but with dark transverse lines in the basal part. Cape Colony, Kaffirland, Natal and Transvaal.

**L. dingana** Trim. Wings above black-brown; the forewing before the apex in cellules (4), 5 and 6 with 2 or 3 connected, black, white-pupilled eye-spots, which are bordered on both sides by yellow-red, connected spots; beyond the eye-spots the two rows of spots are joined to a small red-yellow spot in cellule 3 and are farther accompanied by a free spot of the same colour in cellule 2. Hindwing above with 5 eye-spots bordered with red-yellow. The under surface is very indistinctly marked; the light spots on the upperside of the forewing are indistinct or absent and the eye-spots of the hindwing have no yellow rings. Natal and Transvaal.

**L. oxylus** Trim. is very similar to the following species, but larger, and in addition to the distinguishing marks given in the synopsis differing in the lighter rings of the eye-spots on the hindwing. Cape Colony and Kaffirland.

**L. clytus** L. (28f). Wings above dark brown; the forewing beyond the middle with a curved light yellow transverse band, beginning at the costal margin and often reaching vein 1; posteriorly it is more or less broken up into spots; cellules 5 and 6 each with a white-pupilled eye-spot, which is proximally separated by the ground-colour from the yellow spot in the cellule, but distally immediately bounded by three yellow spots in cellules 5—7. Hindwing above with 4 or 5 eye-spots ringed with red-yellow. Under surface of the forewing dark brown; the light transverse band narrower than above, proximally bordered with blackish and behind vein 4 indistinct or absent. Hindwing beneath black-grey with black spots at the base, two very deeply dentate transverse lines across the middle and 7 eye-spots, covered with violet-grey scales and having a yellow, a blackish and a grey ring. — The pupa is brown-grey with small blackish dots and streaks and has been found lying unattached under a stone. — Occurs only in Cape Colony, but is there very common.

**L. mintha** Geyer is very similar to the preceding species, but is distinguished at once by the flat, transversely truncate club of the antenna, the whitish veins on the underside of the hindwing, the red base of the forewing beneath and the somewhat smaller size. Cape Colony.

**L. cassus** L. is rather unlike the preceding species. Wings dark black-brown; forewing above with dark brown-red reflection from the base to far beyond the middle and before the apex with a large, rounded eye-spot ornamented with two white dots; hindwing above with 3—5 eye-spots bordered with dark red; the basal half of the forewing beneath is dark red and distally bounded by a dark line: the eye-spot appears almost as two connected spots. Hindwing beneath with two undulate black transverse lines, which are indistinctly bordered with yellowish scales, and with very indistinct eye-spots, scarcely indicated except by grey-yellowish scales. — The larva lives on grasses and is light yellowish brown with a fine, double black dorsal line and a broad dark latero-dorsal line: body clothed all over with short, small dark bristles; head large, dark brown; anal points very short. — Pupa light sand-coloured, irrorated with brown: rests free on the ground. Cape Colony and Madagascar. The species is fond of rocky districts and flies near the ground.

**L. cassina** Bthr. (28f) only differs in its smaller size, darker ground-colour and the whitish (instead of yellowish) bordering to the markings on the underside of the hindwing. Cape Colony.

### Ypthima Group.

The following genera differ from all those already mentioned in the simple claws, the naked eyes and in having at most two of the veins on the forewing inflated at the base. The species have thin wings and are on the average small, having rarely an expanse of more than 40 mm. The genera can easily be distinguished by the following synopsis.

### Synopsis of the Genera.

- I. Veins 10 and 11 of the forewing free from the anterior margin of the cell. The forewing above with two simple eye-spots, in cellules 3 and 5. 11. *Coenyra*.
- II. Vein 10 of the forewing arises far beyond the apex of the cell from the stalk of 7—9, vein 11 alone arising free from the anterior margin of the cell.
  - A. Forewing only with single eye-spots. Antenna not or scarcely thickened at the tip. 12. *Physcaeneura*.
  - B. Forewing before the apex in cellules 4 and 5 with a large, bi-pupilled eye-spot, rarely with a further spot in cellule 2.
    - \* Only vein 12 of the forewing inflated at the base.
      - a. Antenna with distinctly defined, more or less flattened club. 13. *Pseudonympha*.
      - b. Antenna with little projecting, irregularly rounded club. 14. *Neocoenyra*.
    - \*\* Both vein 12 and the lower median vein of the forewing inflated at the base; the latter, however, only slightly. 15. *Ypthima*.



11. Genus: **Coenyra** Hew.

The species of this genus are small, with delicate wings, and are easily recognizable by having the two eye-spots of the forewing placed in cellules 3 and 5. The wings have the margins entire and are broadly rounded.

*hebe.*  
*aurantiaca.* **C. hebe** Trim. Wings brown-grey; the forewing above and beneath with three broad rust-coloured or orange-yellow (ab. **aurantiaca** ab. nov.) transverse stripes, two in the cell and the third behind it, and two eye-spots with silvery pupils and grey-yellow bordering; hindwing above with 4 or 5 silvery-pupilled eye-spots, those in cellules 2 and 3 larger than the others. Hindwing beneath yellowish grey with 3 or 4 orange-yellow transverse stripes in the basal part and 6 eye-spots, one each in cellules 1c—6: the eye-spots have silvery pupils and a yellowish and a dark brown ring. Both wings beneath before the distal margin with two uniform, dark, thick lines. From the eastern parts of Cape Colony to Delagoa Bay. The ♂ is distinguished by a dark mealy spot, placed before the middle of the hindmargin on the upperside of the forewing.

*rufiplaga.* **C. rufiplaga** Trim. is above much darker, black-brown, and has on both surfaces of the forewing a very large, oval orange-red spot, extending from vein 1 to vein 6 and enclosing the eye-spots; the reddish transverse stripes are absent above, but distinct on both wings beneath, although narrower than in *hebe*, with which species *rufiplaga* otherwise nearly agrees. Transvaal.

12. Genus: **Physcaeneura** Wallgr.

Very slenderly built butterflies with delicate wings, distinguished by having the forewing, at least beneath ornamented near the distal margin with a transverse row of 4 or 5 metallic-pupilled eye-spots of equal size, which touch one another. Only vein 12 of the forewing is inflated at the base. The antenna is very short and has a gradually thickened, irregularly rounded club. Both wings beneath striated with black at least at the margins.

*panda.* **Ph. panda** Bdv. (28 f). Antenna very short, reaching but little beyond the extremity of the basal inflation of vein 12. Both wings above dark brown, with a nearly straight row of red-yellow, black-pupilled eye-spots of equal size, placed on the forewing in cellules 2—6 and on the hindwing 1c—4 or 5. Under surface of both wings yellowish white with numerous sharply defined black transverse streaks and two brown lines before the distal margin; the red-yellow eye-spots with metallic pupils stand out sharply against this ground; in the ♂ the hindmargin of the forewing is unicolorous black to vein 2. In the ♀ the wings are lighter above and hence the black striae of the under surface show through faintly. Damaraland to the Transvaal, Natal and Delagoa Bay.

*pione.* **Ph. pione** Godm. (28 f). The antenna of medium length, reaching far beyond the yellowish basal inflation of vein 12; the club very long, not at all thickened. The wings white or whitish; above the costal margin of the forewing is narrowly, the distal margin of both wings and the hindmargin of the forewing broadly black-brown; in the dark marginal band are placed on the forewing 3—5 and on the hindwing 3—6 red-yellow, black-pupilled eye-spots; in the ♂, however, these eye-spots are often very indistinct or entirely absent. On the under surface the eye-spots are bright yellow with metallic pupils and in the ♀ the entire surface of the wings before the eye-spots is striated with black; in the ♂ only the costal and hindmargin (inner margin) are thus striated, the middle being unicolorous white. Manicaland to German East Africa. —  
*lucida.* ab. **lucida** Btlr. has a shorter black hindmarginal stripe on the upperside of the forewing, so that the white ground-colour reaches the hindmargin before the posterior angle. Nyassaland.

*leda.* **Ph. leda** Gerst. (28 f) differs from the preceding species in having the hindmargin of the forewing and the costal margin of the hindwing above and beneath unicolorous white. The eye-spots are absent above and are black beneath, with elongate silvery pupils and a yellow and a brown ring, usually open towards the base. German and British East Africa.

13. Genus: **Pseudonympha** Wallgr.

The forewing in all the species with a large, rounded black eye-spot before the apex, which is surrounded by a light ring and has two white or blue pupils placed in cellules 4 and 5. Wings above dark brown; the forewing in the middle always more or less extended red-yellow or red-brown; the hindwing also sometimes above with a red-yellow spot and with or without eye-spots. — The species are similar, but can in general be distinguished by sharp differential characters. In order to facilitate their determination I divide them into three groups.

## First Group.

The under surface of the hindwing clouded, with dark striation or irroration; its veins dark.

**Ps. cassius** *Godt.* (28 g). Hindwing above unicolorous, without red, but with two grey-yellow-ringed eye-spots in cellules 2 and 3; eye-spot of the forewing with grey-yellow ring; the forewing above and beneath red in the cell and in the basal part of cellules 2 and 3. Cape Colony to Transvaal. — ab, **triocellata** *Bartel* *triocellata*, has three eye-spots on the upperside of the hindwing. Natal.

**Ps. magus** *F.* (= *sabacus* *Trim.*) (29 c). Forewing above with two red areas, usually separated but occasionally united, one in the cell and one proximally and posteriorly to the grey-yellow-ringed eye-spot; hindwing above with a small reddish patch round the eye-spots in cellules 2 and 3. Hindwing beneath whitish grey, spotted and striated with black-brown; the eye-spots dark and indistinct; forewing beneath in the middle broadly red, at the costal margin and apex somewhat spotted with grey. Cape Colony and Transvaal.

**Ps. vigilans** *Trim.* (28 g) is very similar to the preceding species, but the forewing above has only one large red patch, which bounds the bright, yellow-ringed eye-spot proximally and posteriorly, becomes narrower posteriorly and reaches vein 2, but covers little if any of the apex of the cell. Hindwing above with a small red spot in cellules 2 and 3, but without eye-spots, or only with one small one in cellule 2. Forewing beneath in the middle broadly red, at the costal margin, the apex and the distal margin irrorated with grey to vein 3. Hindwing beneath grey and almost uniformly striated with black-brown all over, without transverse lines; only the eye-spots of cellules 2 and 6 are usually distinct.

**Ps. hippia** *Cr.* (28 g). Forewing above in the middle with a dark red (♂) or red spot, which covers at least the distal half of the cell and the base of cellules 2—5, but does not extend nearly so far distad as the eye-spot; eye-spot large, ringed with grey-yellow and with bluish pupils. Hindwing above with a large red spot, which extends into the cell or at least reaches its apex; eye-spots absent. Hindwing beneath whitish grey with fine and not very dark irroration and with two distinct undulate dark transverse lines; or in the ♀ darker and more densely striated and without distinct transverse lines. Neighbourhood of Cape Town.

**Ps. hyperbius** *L.* (28 g) differs from the preceding species in having the under surface of the hindwing black-brown, finely watered and but little irrorated with grey. Forewing above broadly red in the middle; the red colour surrounds the eye-spot and extends nearer to the distal margin than the latter. Hindwing only with a small, indistinctly defined reddish spot in cellule (2) 3 (and 4) and usually without eye-spots. In the western part of Cape Colony. — **mabillei** *Auriv.* has a much smaller, elongate eye-spot on the forewing and is said to come from Madagascar.

**Ps. irrorata** *Trim.*, like *hyperbius*, has the under surface of the hindwing black-brown; this is, however, not irrorated with grey but with yellowish. Above the hindwing is unicolorous dark brown without red spot and without eye-spots. The bright red area of the forewing covers almost the whole cell and the base of cellules 2—5, but does not reach the distal side of the eye-spot. Cape Colony.

## Second Group.

Under surface of the hindwing clouded as in the first group, but with the veins white and standing out sharply. Hindwing above with 3 small eye-spots in cellules 2—4, more or less broadly surrounded with red-brown; beneath with distinct eye-spots in cellules 2—6, surrounded by a fine yellowish and a broad dark grey ring.

**Ps. paetula** *Trim.* The red colour on the upperside of the forewing forms a single large area, covering the cell and the greater part of cellules 2—5, and extends as near to the distal margin as the eye-spot. The cell of the hindwing beneath without white longitudinal lines. Natal and Transvaal.

**Ps. trimeni** *Btlr.* only differs from *paetula* in the red colour on the forewing above forming two widely separated spots, one in the cell and the other in cellules 3—5 at the proximal side of the eye-spot. The folds in the cell of the hindwing beneath stand out sharply white. The red spot on the upperside of the hindwing is only present as a ring round the eye-spots. Cape Colony.

## Third Group.

Ground-colour of the hindwing beneath uniform, neither clouded nor striated, the veins dark.



*narycia*. **Ps. narycia** Wallgr. (28 g) differs from the following species in having the hindwing unicolorous above. The eye-spot of the forewing margined with light yellow and dark brown; adjoining and around the eye-spot a very broad orange-yellow area, which covers the extreme end of the cell and cellules 2—5 and is distally bordered by a dark line, the latter also continued beyond the eye-spot to the costal margin. Forewing beneath marked almost exactly as above. Hindwing beneath uniform dark brown with slight silky gloss, with median transverse line very indistinct or absent and beyond the eye-spots with a somewhat more distinct reddish brown curved line, running parallel with the distal margin; five sharply prominent, white-pupilled eye-spots, with yellow and fine brown bordering, in cellules 1 c—4 and 6; the last a little larger than the others; the eye-spots in cellules 6, 4 and 3 are placed in a straight line at right angles with the others; costal margin slightly reddish at the base, club of the antenna flat and obtusely rounded. Cape to Transvaal.

*neita*. **Ps. neita** Wallgr. is somewhat larger than *narycia* and has the club of the antenna longer and narrower. The forewing is similarly marked, but the red-yellow area is somewhat smaller. Hindwing above with two red-bordered eye-spots in cellules 2 and 3 and beneath with 4 similar spots in cellules 1 c—3 and 6; costal margin beneath narrowly reddish at the base; the ground-colour of both wings darker than in *narycia*. Kaffirland, Natal and Transvaal.

*durbani*. **Ps. durbani** Trim. only differs from *neita* in having the red-yellow spot on the forewing even smaller, the forewing above striped with reddish at the median vein, three dark transverse lines on the hindwing beneath, with the ground-colour lighter between the second and third lines, forming a distinct light transverse band, and the costal margin of the hindwing not reddish at the base. Cape Colony.

*schultzei*. **Ps. schultzei** Grünb. Wings above black-brown: the rust-brown spot of the forewing is very large, dark-margined, oval, posteriorly reaches vein 1 and anteriorly completely encloses the yellow-ringed eye-spot. The hindwing above beyond the cell with a larger or smaller red-yellow spot or transverse band, in which are placed the small, but sharply prominent, yellow-ringed eye-spots; the under surface of the hindwing almost as above but with three dark transverse lines, one before the middle, one shortly before the eye-spots and one beyond them. Damaraland and Bechuanaland. — This species, which is unknown to me, seems from the description and figure to be identical with *Neocoenyra natalii* Btlr.

#### 14. Genus: **Neocoenyra** Btlr.

This genus is extremely near *Pseudonympha*, only differing in having the club of the antenna irregularly rounded and only gradually thickened, but not flattened. The last species of *Pseudonympha*, however, forms in this respect a transition to *Neocoenyra*.

In the markings there is another peculiarity, which also occurs in many species of *Ypthima*, but is not present in *Pseudonympha* or is only very indistinct. It consists in the fact that the eye-spot on the forewing is placed in a large, oval area, bounded by a distinct dark line; this area usually terminates posteriorly in a point at vein 1 or at the hindmargin and is anteriorly broadly rounded or occasionally open. On the hindwing the eye-spots are also, especially beneath, bordered both proximally and distally by a dark curved line, so as to form a closed eye-spot area. The hindwing above at least with two distinct eye-spots.

The following synopsis may facilitate the determination of the numerous species.

#### Synopsis of the Species.

1. The under surface of the hindwing uniform grey, dark grey or dark brown, not clouded.
  - A. The white pupils of the large eye-spot on the forewing are placed more or less obliquely, so that a line drawn through them would intersect the hinder angle or the distal margin.
    - a. Ground-colour of both wings dark grey, entirely without red, red-yellow or white markings. The eye-spots with grey-yellow rings.
      - \* Under surface of the hindwing light grey: the distal boundary-line of the eye-spot area forms in cellule 4 and in cellule 5 a deep narrow loop. *N. bera*.
      - \*\* Under surface of the hindwing dark grey: the distal boundary-line of the eye-spot area weakly undulate without loops. *N. ypthimoides*.
    - b. The forewing with yellow, red-yellow or white area, or at least the eye-spots with bright rings of these colours.
      - \* On the under surface of the hindwing the distal boundary-line of the eye-spot area forms in cellules 4 and 5 or at least in cellule 4 a deep, narrow loop.

1. The red area on the upperside of the forewing very large, surrounding the eye-spot on all sides, and reaching the apex of the cell and posteriorly the middle of cellule 1 b. *N. natalii*.

2. The eye-spot area on the upperside of the forewing either not red at all or only in its posterior part; the red colour reaching neither the cell nor the middle of cellule 1 b. *N. extensa*.

\*\* The distal boundary-line of the eye-spot area on the underside of the hindwing forms no deep loops.

§ The forewing above without yellow or white area or with one which posteriorly does not extend beyond vein 2 and proximally does not reach the cell.

- a. The distal boundary-line of the eye-spot area on the upperside of the forewing runs parallel with the distal margin and reaches the hindmargin, but does not join the very indistinct line at the proximal margin of the eye-spot area; the latter consequently remains open.

1. The eye-spots with red-yellow rings. The ring of the eye-spot on the forewing moderately thick and distally bordered with dark. *N. grégorii*.

2. The eye-spots with whitish yellow rings. The ring of the eye-spot on the forewing very thick and not margined with dark. *N. cooksoni*.

- oo. The outer boundary-line of the eye-spot area on the upperside of the forewing is proximally bent at or before vein 2 and joints the inner, the eye-spot area being thus posteriorly narrowed and closed.

1. Smaller species, 33—37 mm.

- a. The wings beneath without red spot in the cell and without red transverse lines. *N. duplex*.

- b. The wings beneath with a red spot in the cell and with red transverse streaks or lines. *N. rufolineata*.

2. Larger species, 39—44 mm.

- a. Eye-spot area on the upperside of the forewing small, almost circular and only reaching vein 3. *N. victoriae*.

- b. Eye-spot area on the upperside of the forewing large, oblong and reaching vein 2 or at least the middle of cellule 2. *N. extensa*.

§§ The forewing above with a large ochre-yellow or white area, which surrounds the inner side of the eye-spot, proximally reaching the cell and posteriorly vein 1 or at least the middle of cellule 1 b.

1. The patch on the forewing ochre-yellow. *N. jordani*.

2. The patch on the forewing white. *N. fuelleborni*.

B. The white pupils of the large eye-spot on the forewing placed vertically, so that a line drawn through them would intersect the hindmargin. *N. parallelopupillata*.

II. The under surface of the hindwing clouded, irrorated or striated with grey and brown. *N. heckmanni*.

**N. natalii** *Bdv.* Both wings light grey-brown, beyond the middle, with a large orange-yellow area *natalii*, which completely encloses the eye-spots. Forewing beneath almost as above; hindwing beneath with 4 eye-spots in cellules 1 c, 2, 3, 4 and 6; the outer boundary-line of the eye-spot area forms in cellule 4 and in cellule 5 a narrow, deep loop. Damaraland; Transvaal, Zululand, Matabeleland.

**N. bera** *Hew.* (28 g, 29 a). Wings above grey-brown: the forewing with large, bluish-pupilled eye-spot *bera*, bordered with grey-yellow and black-brown, placed in a light grey, blackish-margined area; the hindwing above with two eye-spots with yellowish and dark brown rings in cellules 2 and 3. Forewing beneath almost as above but with the eye-spot area darker and posteriorly more elongated. Hindwing beneath light grey with an indistinct black transverse line in the middle and sharply marked boundary-line to the eye-spot area, the outer line forming a deep loop in cellule 4 and in cellule 5. The eye-spots with silvery pupils, sharply ringed with grey-yellow and black; the hindwing usually with 5 eye-spots, one each in cellules 1 c—4 and 6; those in cellules 3 and 6 a little larger than the others. Nyassaland and German East Africa.

**N. ypthimoides** *Btlr.* Similar to the preceding species, above grey-brown, the eye-spot areas lighter grey, *ypthimoides*, the one on the hindwing posteriorly open, reaching the hindmargin. The under surface of both wings black-grey as far as the eye-spot area; the hindwing beneath with two eye-spots in 1 c and one each in 2, 3 and 6, sometimes also in 4 and 5; the eye-spots with a grey-yellow and a dark ring; outer boundary-line of the eye-spot area slightly undulate without loops. Nyassaland and German East Africa.



- gregorii*. **N. gregorii** Btlr. Wings above black-brown, at the distal margin lighter with grey reflection: outer boundary-line of the eye-spot area on both wings thick and very distinct, running parallel with the distal margin and on the hindwing reaching the hindmargin: inner boundary-line on the contrary very indistinct or entirely absent: the eye-spots with a red-yellow and a dark ring. On the under surface the inner boundary-line is somewhat more distinct: the eye-spot area of the forewing posteriorly broadly open, that of the hindwing somewhat irrorated with grey. German and British East Africa.
- cooksoni*. **N. cooksoni** Ham.-Druce scarcely differs from *gregorii* except in having the eye-spot of the forewing surrounded by a very thick whitish-yellow or almost whitish ring: the eye-spots of the hindwing with light yellow rings, cellules 4 and 5 usually without eye-spots. Katanga district.
- duplex*. **N. duplex** Btlr. (29 a). Wings above black-brown, little lighter at the distal margin: the eye-spot area of the forewing is completely closed, terminates posteriorly at vein 2 and is entirely or for the most part filled up with red-yellow; the eye-spot has a bright yellow and a brown-red ring; in the ♀ eye-spots are often present also in cellules 2 and 3 of the forewing: hindwing above with red-bordered eye-spots in 2 and 3. Forewing beneath coloured and marked as above: hindwing beneath with two eye-spots in cellule 1 c and one each in 2, 3 and 6, basal area unicolorous dark-brown. German East Africa, British East Africa and Somaliland.
- rufilineata*. **N. rufilineata** Btlr. is allied to *duplex*, but differs in the upperside of the hindwing having an eye-spot in cellule 6, whilst on the underside of the forewing a transverse streak and a spot in the cell, the boundary-line of the eye-spot area and the submarginal line are red-brown and on the underside of the hindwing the base, two transverse lines in the middle, the boundary-line of the eye-spot area and the submarginal line are of the same colour. Somaliland.
- heckmanni*. **N. heckmanni** Thurnau (29 a). Wings above dark brown, the eye-spot of the forewing with an orange-yellow and a reddish ring, but without distinct boundary-lines to the eye-spot area; the hindwing above with two eye-spots ringed with red-yellow in cellules 2 and 3; the under surface of both wings clouded at the distal margin; eye-spot area of the forewing indistinctly bounded by a red-brown line, terminating near to vein 2, that of the hindwing, as also the basal area, irrorated with grey, its outer boundary-line strongly undulate or angled, but indistinct; the eye-spots small, punctiform or absent. German East Africa. ab.
- wentzelae*. **wentzelae** Thurnau only differs in having 4 eye-spots on the upperside of the hindwing. German East Africa.
- extensa*. **N. extensa** Btlr. (29 a) is larger than the species already described. Both wings with dark brown ground-colour; the eye-spot of the forewing is surrounded by large red-yellow and black rings; the eye-spot area is completely closed posteriorly, reaches vein 2 or at least the middle of cellule 2 and is scarcely lighter than the ground-colour. Hindwing above with two eye-spots with red-yellow and dark rings in cellules 2 and 3. Forewing beneath coloured and marked quite as above. Hindwing beneath red-brown at the base of the hindmargin and with a red-brown spot in 1 a and 1 b; four eye-spots of almost uniform size, with white pupils and red and black rings, in cellules 1 c—3 and 6: the boundary-line of the eye-spot area is dark and distinct, the outer line either quite even or with 1 or 2 deep loops in cellules 4 and 5. In this
- major*. species, therefore, this character is without importance as a specific distinction. Mashonaland. — ab. **major** Trim. only differs in having the eye-spot area of the forewing more or less completely suffused with red-yellow. Transvaal, Matabeleland, German South-West Africa, Mashonaland.
- victoriae*. **N. victoriae** Auriv. is perhaps a form of *extensa*, from which it differs in having the eye-spot area of the forewing smaller, more rounded, and much lighter than the ground-colour of the basal part. German East Africa and Nyassaland.
- jordani*. **N. jordani** Reb. (29 a). Wings dark brown. Eye-spot of the forewing large, broadly oval, ringed with yellow-brown and blackish, with two silvery pupils; the eye-spot area is very large and for the most part ochre-yellow (only before and beyond the eye-spot grey), the boundary-line is thick but indistinct, proximally yellow-brown and distally blackish. The hindwing as usual, above with two eye-spots ringed with red-yellow and black and with a very large ochre-yellow transverse patch between the eye-spot in cellule 3 and the apex of the cell. The hindwing beneath with an ochre-yellow spot in cellule 4 at the apex of the cell and with 5 eye-spots, in cellules 1 c (two), 2, 3 and 6, in cellules 4 and 5 only with white dots: the eye-spot area is somewhat lighter than the ground-colour, proximally indistinctly defined, but distally bounded by a thick dark line. German East Africa in the Ulaguru Mountains.

**N. fuelleborni** *Thurau* (29 a) has the eye-spot area on the forewing pure white and the light spot at the apex of the cell on the hindwing is wanting, but otherwise it agrees almost entirely with *jordani*. German East Africa. *fuelleborni*.

**N. parallelopupillata** *Karsch* (29 a, b) differs from the other species in having the white pupils in the eye-spot of the forewing placed directly behind one another, so that a line drawn through them would intersect the hindmargin. The hindwing on both surfaces has yellow-ringed eye-spots in cellules 2 and 3 and beneath in addition an eye-spot in cellule 6, but cellule 1 c has two white dots and 4 and 5 each have one. Usambara. *parallelopupillata*.

### 15. Genus: **Ypthima** *Hbn.*

Small, delicate-winged species, only differing from the other genera of the group in having the median vein of the forewing thickened at the base. The forelegs of the ♂ are extremely small. As in the two preceding genera the forewing has before the apex a large bi-pupilled eye-spot in cellules 4 and 5. The under surface of the hindwing is nearly always clouded or distinctly striated.

The genus occurs in all the warmer parts of the Old World and is also represented in the confines of the Palearctic Region. In the Ethiopian Region comparatively few species occur on the continent; the majority are confined to Madagascar. Concerning the habits and the early stages of *Ypthima* cf. vol. I, p. 91, and vol. IX, p. 286. From the Palearctic Region 30 forms are known, from the Indo-Australian 120; cf. vol. I, p. 91—93, pl. 34, and vol. IX, p. 286—294, pl. 99.

#### First Group.

The antenna reaches at least to the apex of the cell on the forewing. The eye-spots of both wings with red, red-yellow or orange-yellow ring. Species from Madagascar.

**Y. goudoti** *Mab.* Wings above dark brown, margins entire; the forewing in cellule 2 with a small, white-pupilled eye-spot, its broad red-yellow ring forming with the ring of the anterior eye-spot a large oval area; hindwing above with 2 or 3 eye-spots broadly ringed with red-yellow. The wings beneath grey, rather sparsely irrorated and striated with brown; the eye-spots of the forewing as above; the hindwing beneath entirely without eye-spots. *goudoti*.

**Y. tamatavae** *Bdv.* Distal margin of the hindwing undulate; wings above dark brown; forewing without eye-spot in cellule 2; the red-yellow ring of the eye-spot in cellules 4—5 is as broad as the diameter of the black part or broader; the hindwing above with contiguous eye-spots in cellules 2 and 3. Forewing beneath at the costal and distal margins striated and more or less spotted with grey; the hindwing beneath grey, striated with brown and with irregular dark brown spots, at the middle a large one which is continued as an irregular transverse band almost to the inner margin; in this band at the base of vein 5 is placed a sharply prominent whitish yellow spot; eye-spots are wanting. *tamatavae*.

**Y. zanjuga** *Mab.* (29 b) is very similar to the preceding species and has like the latter a dark submarginal line on both wings above. Beneath it only differs in the distinct transverse lines in the cell of the forewing, the more uniformly marbled hindwing without larger black-brown spots and in the absence of the light spot at the base of vein 5; the eye-spots are represented by black dots. *zanjuga*.

**Y. argyrina** *Mab.* has the margins of the wings entire and is smaller than the two preceding, but otherwise closely resembles them above. Beneath it differs from all other species in the numerous angular silvery spots on the hindwing; these spots bound a dark brown median band on both sides and also form a submarginal transverse row, proximally to which are placed in an almost straight row 4 black, white-pupilled eye-spots, narrowly ringed with red-yellow, in cellules 1 c—3 and 6; the spot in cellule 1 c is bi-pupilled; the forewing beneath is of a uniform ground-colour, not clouded, and with some silvery spots only between the apex and the eye-spot. *argyrina*.

**Y. dyscola** *Mab.* (28 f, 29 c) has the margins of the wings entire and is above marked almost entirely as the preceding species, the red-yellow rings of the eye-spots being very broad and the eye-spots of the hindwing confluent; both wings, however, without dark submarginal line. Forewing beneath uniform dark brown, only at the apex somewhat irrorated with grey; hindwing beneath slightly striated with brown, beyond the middle marbled with chocolate-brown, sprinkled with yellowish scales and at the distal margin broadly suffused with violet without eye-spots. *dyscola*.

**Y. ibitina** *Ward* has the wings above black-brown, grey at the eye-spots; expanse about 36 mm. The eye-spots on the upperside of the hindwing are placed in a red-yellow transverse band. On the under surface of the forewing the eye-spot is surrounded by a large, grey, oval area, extending from the costal to *ibitina*.



the hindmargin. The hindwing is beneath ash-grey in the middle and has the hindmargin blackish with an ash-grey stripe; the distal part is brown-grey and encloses an irregular ash-grey spot, which is placed behind the two yellow-ringed eye-spots.

In the species which follow the rings of the eye-spots on the upper surface are lighter and narrower than in the preceding and the eye-spots of the hindwing are not joined together but quite free or at most touching one another. The hindwing always has the margins entire.

*andriana.* **Y. andriana** Mab. Distal margin of the forewing uniformly curved; wings above dark brown; the hindwing above with two free eye-spots in cellules 2 and 3, beneath very dark reddish brown, irrorated with light at the apex and the distal margin and with a small spot at the base of vein 5, but entirely without eye-spots. Expanse 36—38 mm.

*vinsoni.* **Y. vinsoni** Guén. (29 b) only differs from *andriana* in having the hindwing beneath lighter, in the middle, at the apex and at the anal angle more or less whitish, and with 2 or 3 distinct eye-spots, in cellules (1 c), 2 and 6. The forewing beneath at the apex distinctly shaded with white.

*rakoto.* **Y. rakoto** Ward is confusingly like *vinsoni*, only differing in having the forewing beneath not whitish at the apex and the hindwing uniform dark brown in the basal part and at the distal margin broadly but only slightly lighter. The ♀ has an eye-spot also in cellule 6 on the upperside of the hindwing.

*triophthalma.* **Y. triophthalma** Mab. (29 b) is a fourth similar species, coming especially close to *vinsoni*, from which it chiefly differs only in the hindwing beneath having a distinct eye-spot also in cellule 3. The eye-spots in cellules 3 and 6 are separated by a whitish transverse band, which is directed from the apex towards the inner margin. North Madagascar.

*mabillei.* **Y. mabillei** Auriv. measures 43—45 mm. and is consequently larger than the preceding species. Wings above dark brown with a blackish submarginal line: the forewing above with one, the hindwing above with 2 (♂) or 3 eye-spots narrowly ringed with orange-yellow. Forewing beneath dark brown with brown-grey eye-spot area. Hindwing beneath at the base and at the distal margin dark brown, across the middle broadly violet-grey with brown striae, entirely without eye-spots. Distal margin of the forewing weakly curved without angle.

*mopsus.* **Y. mopsus** Mab. is similar to *mabillei*, but still larger and without eye-spot in cellule 3 of the hindwing. The hindwing beneath with eye-spots in cellules 1 c, 2 and 6, dark brown to beyond the middle, only behind the middle, just before the eye-spots, more or less lighter and all over with distinct, black transverse striae.

The two following species differ from all the others in having the distal margin of the hindwing distinctly angled at vein 5 or 6. They are regarded by BUTLER as a separate genus, *Callypthima*.

*smithi.* **Y. smithi** Mab. The hindwing angled at the end of vein 5. Wings above black-brown with bluish grey reflection and rather broad black marginal band; forewing with one, hindwing with two (♂) or three (♀) eye-spots margined with orange-yellow. Forewing beneath coloured almost as above, but lighter; hindwing beneath marbled with dark brown and blue-grey, near the middle of the costal margin with a large yellowish white spot, which is accompanied by a small spot of the same colour at the apex of the cell; no eye-spots.

*sufferti.* **Y. sufferti** Auriv. differs from *smithi* in that the distal margin of the forewing is angled between veins 6 and 7, the forewing above is dark brown, scarcely lighter at the distal margin, the eye-spot of the forewing is larger and has a much broader orange-yellow ring, the yellow rings of the eye-spots on the upperside of the hindwing are merged together into a short band and the hindwing beneath is much lighter, ash-grey, at the middle of the inner margin even whitish, and has two large chestnut-brown spots at the costal margin and an irregular marginal band of the same colour between the anal angle and vein 6.

The last three species of the first group are distinguished from all the rest by having the under surface of the hindwing for a greater or lesser extent pure white without striae and bearing three well developed eye-spots. The wings are dark brown above, with the usual eye-spot on the forewing and two or three ocelli on the hindwing; all the eye-spots have free orange-yellow rings.

*albivittula.* **Y. albivittula.** Hindwing beneath black-brown to far beyond the apex of the cell, then with a narrow white transverse band, at the distal margin again black-brown, the eye-spots surrounded by the black-brown colour. In the type-form **albivittula** Mab. ♀ the eye-spots of the hindwing are placed in cellules 2, 3 and 6. — **excellens** Btlr. has also three eye-spots on the under surface of the hindwing, but these are placed in cellules 1 c, 2 and 6.

**Y. batesi.** Hindwing beneath only black-brown to vein 2 or 3; the apex of the cell consequently covered by the white colour; the white band is in the middle 6—7 mm. in breadth and completely surrounds the eye-spot in cellule 6. — **batesi** *Fldr.* The hindwing above in the ♂ with only one eye-spot (in cellule *batesi*. 2), in the ♀ with two eye-spots of equal size (in cellules 2 and 6), beneath with three eye-spots which are placed in cellules 1c, 2 and 6. — **elwesi** *Auriv.* (29b). The hindwing above in the ♂ with two eye-spots (in *elwesi*. cellules 2 and 3) and in the ♀ with three (in 2, 3 and 6), beneath with eye-spots in cellules 2, 3 and 6.

**Y. niveata** *Btlr.* Hindwing beneath white from the base; a broad, distally pointed stripe at the costal margin, a marginal band and the bordering of the three eye-spots (in cellules 1c, 2 and 6) are dark brown. The hindwing above without eye-spot in cellule 3. *niveata*.

### Second Group.

The antenna reaches at least to the apex of the cell of the forewing and has a thin club. Eye-spots with light yellow rings. Those of the hindwing never joined together. The under surface of both wings with numerous fine black-brown transverse striae on a light, grey or whitish ground. — Species from continental Africa; only *Y. asterope* is said to occur on Madagascar.

**Y. asterope.** Both wings above uniform dark brown without any trace of striation; the eye-spot area of the forewing little lighter than the ground-colour and distinctly dark-margined. The hindwing above without or with indistinct submarginal line, usually with eye-spot in cellule 2. Wings beneath whitish grey, regularly striated with black-brown; the forewing at the hindmargin unicolorous black-brown; the hindwing usually with at least three eye-spots present, but often very small and punctiform. The lateral clasps of the ♂ are only dentate at the tip, which is transversely truncate. — **asterope** *Klug* (29c). The hindwing above with *asterope*. a rather large eye-spot in cellule 2, beneath with three distinct eye-spots, a bi-pupilled one in cellule 1c and one each in 2 and 6. South and East Africa, Abyssinia, Arabia. The following (often insignificant) aberrations of this species have been provided with names. — **binucleolata** *Strand* (29d). Hindwing beneath with 3 or 4 very *binucleolata*. small eye-spots in cellules 1c, 2 and 6; that in cellule 1c bi-pupilled or double. German East Africa and Togo. — **simpliciocellata** *Strand* (29d). The eye-spot in cellule 1c of the hindwing beneath black with two *simpliciocellata*. small whitish dots and narrow light ring; the other two eye-spots also very small and indistinct. The under surface of the hindwing unusually light and with an undulate dark transverse line at about 6 mm. from the distal margin. Abyssinia. — **inocellata** *Strand* (29d). Hindwing beneath without eye-spots, above with one *inocellata*. quite small one. Under surface darker than usual; hindwing with median transverse area of about 3 mm. in breadth, faintly indicated by two dark transverse lines. German East Africa. — **triocellata** *Strand* (29d). *triocellata*. Hindwing beneath with 6 minute eye-spots, two in cellule 1c and one each in cellules 2, 3, 5 and 6, above with three eye-spots, in 1c, 2 and 3. Nyassaland. — **biocellata** *Strand* (29d). Hindwing above with two *biocellata*. eye-spots, in cellules 1c and 2, beneath with 6 as in *triocellata*. German East Africa. — **biocelligera** *Strand* *biocelligera*. (29d). Hindwing above marked as in *biocellata*, beneath as in *binucleolata*. — **interrupta** *Strand* (29d). Hind- *interrupta*. wing beneath with 6 small eye-spots, two in cellule 1c and one each in 2, 4, 5 and 6, above with two somewhat larger ocelli, in cellules 2 and 4. German East Africa. — **uniocellata** *Strand* (29d). Hindwing *uniocellata*. beneath with 5 or 6 minute eye-spots, the first three on a brownish transverse band, above with only one eye-spot, in cellule 2. German East Africa. — **hereroica** *Grünb.* Hindwing above only with a small eye-spot *hereroica*. in cellule 2, beneath with a double spot in cellule 1b and an eye-spot in 2. Damaraland.

**Y. granulosa** *Btlr.* is very similar to the preceding species, only differing in its somewhat larger size *granulosa*. and in having a distinct dark submarginal line on the upperside of the hindwing; the hindwing beneath with four small punctiform eye-spots, two near the anal angle and two at the costal margin. The ♂ is sharply distinguished from *asterope* by the lateral clasps, which have the tip rounded and are finely dentate both at the tip and at the lower margin. German East Africa.

**Y. simplicia** *Btlr.* is likewise very similar to the preceding and has on the upper surface a distinct *simplicia*. eye-spot in cellule 2 of the hindwing; hindwing beneath usually only with two large eye-spots in cellules 2 and 6; the eye-spots are broadly margined with light yellow and black-brown; forewing beneath striated to the hindmargin and with large eye-spot area, which, however, is not lighter than the other parts. Congo, East Africa, Abyssinia.

**Y. doleta** *Kirby* (29c) has the upper surface clouded, not uniform, but partly darker, partly lighter and *doleta*. indistinctly striated, with the eye-spot area on the forewing sharply defined, a sinuous black transverse line before the eye-spots of the forewing and a distinct dark submarginal line on the hindwing, strongly thickened proximally at vein 4. Beneath both wings are grey, with fairly uniform dark transverse striation all over. Hindwing above with a small eye-spot in cellule 1c, a larger in 2 and often also a not very distinct one in 6, beneath with two small eye-spots joined together in cellule 1c and one each in cellules 2 and 6. West Africa from Sierra Leone to Angola. — ab. **tripunctata** *Strand* has 5 eye-spots on the upperside of the hind- *tripunctata*.



*quadripunctata*. wing, two in 1c and one each in 2, 3, 5 and 6. Cameroons. — ab. **quadripunctata** Strand only differs from *tripunctata* in the absence of the eye-spot in cellule 5 of the hindwing beneath. Cameroons. — ab. **quinquepunctata**. **punctata** Strand has above two eye-spots in cellule 1c and one each in 2, 3, 5 and 6, and beneath two in 1c and one each in 2—6. Togo; Cameroons. — ab. **septemocellata** Strand. Hindwing above and beneath with 7 eye-spots, two in 1c and one each in 2—6. Cameroons.

*impura*. **Y. impura** Ehw. & Edw. is beneath similar to the preceding species. Wings above brown; both wings with a narrow dark submarginal band and a double dark marginal line; eye-spot area of the forewing subelliptical, sharply defined distally; hindwing above with an eye-spot in cellule 2 and sometimes 1 or 2 in cellule 1c, the area round them not defined, beneath with three eye-spots, a double one in 1c and one each in 2 and 6. Gaboon, Angola and East Africa.

*pupillaris*. **Y. pupillaris** Bthr. is allied to *doleta*; smoke-brown; wings above with the marginal part lighter, proximally bounded by a dark line, with two fine marginal lines; forewing with a large, oval, bi-pupilled eye-spot; hindwing with an eye-spot in cellule 2 and a very small double one in 1c. Wings beneath grey, densely striated with olive-brown, a submarginal stripe and a marginal line dark. Hindwing beneath with three eye-spots, one with double pupil in 1c, one in 2 and a larger in 6. Central Africa. — ab. **depupillata** Strand. *depupillata*. The eye-spots in cellules 2 and 5 on the upperside of the hindwing are large, but without white pupils. Loma.

*itonias*. **Y. itonia** is almost the size and shape of *asterope*, but differs from this and from all the other allied African species in the hindwing having 3—6 eye-spots above and usually 7 beneath, placed in a nearly straight line. Wings above pretty uniform grey-brown with fine dark submarginal line, but without distinctly defined eye-spot areas. Eye-spots ringed with light yellow and with silvery white pupils. The under surface is grey with rather dense, uniform brown transverse striation. The number of the eye-spots varies in this species also and on this the unimportant aberrations here mentioned are based. — **itonias** Hew. has above 5 and beneath 7 eye-spots on the hindwing. Distributed from Sierra Leone to Angola, Manicaland, German East Africa and Abyssinia. — ab. **hoehnli** Holl. (29b as *itonias*). Hindwing above with only 3 eye-spots, otherwise similar to the type-form. East Africa. — ab. **quadriocellata** Strand. Hindwing above with 4 eye-spots, two small ones in cellule 1c and one each in 2 and 3, beneath with 7. German East Africa. — ab. **microocellata** Strand. Hindwing above with 4, but beneath with only 6 eye-spots, the one in cellule 4 being absent. German East Africa. — ab. **pluripupillata** Strand only differs from the type-form in the eye-spot of the forewing having three white pupils and being accompanied posteriorly by a small eye-spot. Central Africa. — ab. **subocellata** Strand, according to its author's description, only differs from ab. *quadriocellata* in the hindwing beneath having one small eye-spot in cellule 2 (!). German East Africa.

*albida*. **Y. albida** is larger than the allied species and is at once recognizable by the blue-grey or bluish white, somewhat silvery ground-colour of the upper surface, with brown distal margin; the dark transverse striae are sparse or some of them entirely absent and only denser towards the distal and costal margins. Beneath the ground-colour is almost completely darkened by the dense striation. The forewing has usually on both surfaces a large bi-pupilled eye-spot ringed with light yellow and dark brown and the hindwing 1—3 eye-spots. — **albida** Bthr. Hindwing above only with one small eye-spot, in cellule 2, beneath usually with three ocelli in 1c, 2 and 6. German and British East Africa. — ab. **argentata** Bartel only differs in the hindwing above having two eye-spots, a small one in cellule 1c and a larger in 2. German East Africa. — ab. **conradsi** Strand (29c) has on the upperside of the hindwing 3 eye-spots, there being also one present in cellule 3. German East Africa. — **uniformis** Bartel is distinguished from all the other forms by the complete absence of the large eye-spot on the forewing. The whole surface of the wings is silver-white; only the basal part of the costal margin and an extremely narrow apical part of the forewing and the inner margin of the hindwing are dusted with dark; hindwing only with a minute eye-spot in cellule 2. Central Africa. — **occidentalis**. **occidentalis** Bartel is the West African race and only differs in the darker, more bluish ground-colour and the much larger eye-spots on the under surface of the hindwing. In the interior of the Cameroons at an elevation of 1000 m.

### Third Group.

The antenna is extraordinarily short, scarcely reaching beyond the middle of the cell, but has a distinct, pear-shaped club. Forewing with a bi-pupilled eye-spot, widely removed from the apex. Hindwing above without eye-spots.

*mashuna*. **Y. mashuna** Trim. (29b). Both wings above uniform dark brown; the forewing with small, reddish-yellow-ringed eye-spot; the hindwing without markings. Forewing beneath, as above, uniform dark brown without striation, at the costal margin sprinkled with some grey scales; the hindwing beneath dark grey with widely separated dark transverse striae and with 2—7 very small black eye-spots with silver-white pupils. The club of the antenna is yellowish. Mashonaland.



# Alphabetical List

with reference to the original descriptions of the forms of the Ethiopian *Satyridae*.

\* signifies that the form is also figured at the place cited.

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*angulifascia* Henot. *Btlr.* Ann. Mag. Nat. Hist. (5) 4, p. 228.  
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*argyrina* Ypthima *Mab.* Ann. Soc. Ent. Fr. (5) 8, Bull. p. 91.  
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*aurantiaca* Coenyra *Auriv.* Seitz, Macrolep. 13, p. 103.  
*auriferunda* Mycal. *Btlr.* Cat. Satyrid., p. 131.\*  
*aurivillii* Mycal. *Btlr.* Proc. Zool. Soc. Lond. 1895, p. 724.\*  
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*bera* Neocoen. *Hew.* Ent. Monthl. Mag. 14, p. 107.  
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*biocellata* Ypthima *Strand*, Ent. Zeitschr. 23, p. 112.  
*biocelligera* Ypthima *Strand*, Ent. Zeitschr. 23, p. 112.  
*bowkeri* Lepton. *Trim.* Trans. Ent. Soc. Lond. 1870, p. 348.\*  
  
*campa* Mycal. *Karsch*, Berlin. Ent. Zeitschr. 38, p. 206.\*  
*campina* Mycal. *Auriv.* Ent. Tidskr. 22, p. 114.\*  
*cassina* Lepton. *Btlr.* Cat. Satyr., p. 72.\*  
*cassins* Pseudon. *Godt.* Ent. Meth. 9, p. 526.  
*cassus* Lepton. *L.* Mus. Lud. Ulr., p. 269.  
*centralis* Henot. *Auriv.* Arkiv f. Zool. 1, p. 217.\*  
*chelys* Gnoph. *F.* Ent. Syst. 31, p. 80.  
*cingulina* Henot. *Mab.* Ann. Soc. Ent. Belg. 23, Bull. p. 205.  
*clytus* Lepton. *L.* Mus. Lud. Ulr., p. 268.  
*concolor* Mycal. *Auriv.* Ann. Mus. Genova 44, p. 517.  
*conradsi* Ypthima *Strand*, Ent. Zeitschr. 23, p. 113.  
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*cooksoni* Neocoen. *Druce*, Trans. Ent. Soc. Lond. 1907, p. 77.\*  
*cowani* Henot. *Btlr.* Ann. Mag. Nat. Hist. (5) 5, p. 334.

*danielmanni* Mycal. *Rog.* in Baumann, Usambara Anhang, p. 330.  
*dareca* Mycal. *Strand*, Soc. Ent. 23, p. 6.  
*deannulata* Mycal. *Strand*, Soc. Ent. 25, p. 6.  
*decira* Henot. *Plötz*, Stett. Ent. Zeit. 41, p. 198.  
*dendrophilus* Meneris *Trim.* Trans. Ent. Soc. Lond. (3) 1, p. 399.  
*dentata* Mycal. *E. Sharpe*, in Neumann Elephant-Hunting, p. 438.\*  
*depupillata* Ypthima *Strand*, Ent. Zeitschr. 23, p. 113.  
*desolata* Mycal. *Btlr.* Ann. Mag. Nat. Hist. (4) 18, p. 480.  
*difficilis* Henot. *Mab.* Ann. Soc. Ent. Belg. 23 Bull., p. 105.  
*dingana* Lepton. *Trim.* Trans. Ent. Soc. Lond. 1873, p. 102.  
*diversa* Gnoph. *Btlr.* Ann. Mag. Nat. Hist. (5) 5, p. 33.  
*doleta* Ypthima *Kirby*, Proc. R. Dublin Soc. (2) 2, p. 336.  
*dorothea* Mycal. *Cr.* Pap. Exot. 3, p. 19.\*  
*drepana* Heteropsis *Dbl. & Hew.* Gen. Diurn. Lep. 2, p. 323.\*  
*dubia* Mycal. *Auriv.* Ent. Tidskr. 14, p. 270.\*  
*dubiosa* Gnoph. *Auriv.* Seitz, Macrolep. 13, p. 83.  
*duplex* Neocoen. *Btlr.* Proc. Zool. Soc. Lond. 1885, p. 758.  
*durbani* Pseudon. *Trim.* S. Afr. Butt. 1, p. 80.  
*dyscola* Ypthima *Mab.* Ann. Soc. Ent. Belg. 23 Bull., p. 105.  
  
*eliasis* Henot. *Hew.* Eyot. Butt. Mycalesis t. 7 f. 44, 45.\*  
*elisi* Henot. *Karsch*, Berl. Ent. Zeitschr. 38, p. 209.\*  
*elwesi* Ypthima *Auriv.* Rhopal. Aethiop., p. 77.  
*ena* Mycal. *Hew.* Ent. Monthl. Mag. 14, p. 107.  
*ephorus* Mycal. *Weym.* Stett. Ent. Zeit. 53, p. 79.  
*erysichton* Mycal. *Ehrm.* Journ. N.-York Ent. Soc. 2, p. 77.  
*evadne* Mycal. *Cr.* Pap. Exot. 3, p. 48.\*  
*evanida* Henot. *Thur.* Berl. Ent. Zeitschr. 48, p. 124.\*  
*evenus* Mycal. *Hpff.* Monatsb. Akad. Wiss. Berl. 1855, p. 641.  
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*fuliginosa* Henot. *Mab.* Bull. Soc. Zool. Fr. 3, p. 82.  
*fulvescens* Melan. *Guen.* Note s. l'île Reunion Lepid., p. 15.  
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*goetzi* Mycal. *Thur.* Berl. Ent. Zeitschr. 42, p. 120.  
*golo* Mycal. *Auriv.* Ent. Tidskr. 14, p. 267.\*  
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*graphidabra* Mycal. *Karsch*, Berl. Ent. Zeitschr. 38, p. 203.  
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*grogani* Gnoph. *E. Sharpe*, Ann. Mag. Nat. Hist. (7) 8, p. 279.  
  
*halyma* Mycal. *F.* Ent. Syst. 3 I, p. 243.  
*haroldi* Henot. *Druce*, Trans. Ent. Soc. Lond. 1905, p. 252.\*  
*harpa* Gnoph. *Karsch*, Berl. Ent. Zeitschr. 38, p. 211.  
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*hyperanthus* Mycal. *Baker*, Ann. Mag. Nat. Hist. (8) 2, p. 469.  
*hyperbicus* Pseudon. *L.* Mus. Lud. Utr., p. 257.

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*iboina* Henot. *Ward*, Ent. Monthl. Mag. 7, p. 31.  
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*ignobilis* Mycal. *Btlr.* Trans. Ent. Soc. Lond. 1870, p. 124.  
*impura* Ypthima *Elwes & Edw.* Trans. Ent. Soc. Lond. 1893, p. 23.  
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*irrorata* Pseudon. *Trim.* Trans. Ent. Soc. Lond. 1873, p. 103.  
*istaris* Mycal. *Plötz*, Stettin. Ent. Zeitschr. 41, p. 197.  
*italus* Mycal. *Hew.* Exot. Butt. Idiom. S. 1 f. 1-3.\*  
*itonia* Ypthima *Hew.* Trans. Ent. Soc. Lond. (3) 2, p. 287.\*

*jansei* Lepton. *Swierstra*, Ann. Transv. Mus. 1, p. 175.\*  
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*kenia* Mycal. *Rogenh.* Ann. Mus. Wien 6, p. 462.\*  
*kigonserae* Mycal. *Auriv.* Seitz, Macrolep. 13, p. 93.  
*kochi* Mycal. *Grünb.* Sitzb. Nat. Frd. Berlin 1910, p. 162.\*

*lacus* Henot. *Thur.* Berl. Ent. Zeitschr. 48, p. 125.\*  
*lamani* Mycal. *Auriv.* Oefvers. Vet. Akad. Förhl. 57, p. 1040.  
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*leda* Melan. *L.* Syst. Nat. Ed. 10, p. 474.  
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*mabillei* Ypthima *Auriv.* Rhopal. Aethiop., p. 76.  
*maderakal* Par. *Guér.* in Lefeb. Voyage Abyss. 6, p. 381.\*  
*madetes* Mycal. *Hew.* Ann. Mag. Nat. Hist. (4) 13, p. 381.  
*maeva* Henot. *Mab.* Bull. Soc. Zool. Fr. 3, p. 82.  
*maevius* Henot. *Stgr.* Exot. Schm. 1, p. 229.\*  
*magniplaga* Gnoph. *Heron*, Trans. Zool. Soc. Lond. 19, p. 144.\*  
*magus* Pseudon. *F.* Ent. Syst. 3: 1, p. 223.  
*major* Neocoen. *Trim.* Trans. Ent. Soc. Lond. 1906, p. 61.\*  
*mandanes* Mycal. *Hew.* Exot. Butt. Mycalesis t. 9 f. 61, 62.\*  
*marmorata* Henot. *Auriv.* Seitz, Macrolep. 13, p. 100.  
*martins* Mycal. *F.* Ent. Syst. 3: 1, p. 219.  
*mashuna* Ypthima *Trim.* Trans. Ent. Soc. Lond. 1895, p. 181.\*  
*masikora* Henot. *Mab.* Pet. Nouv. Ent. 2, p. 157.  
*masonra* Henot. *Hew.* Ent. Monthl. Mag. 11, p. 227.  
*matuta* Mycal. *Karsch*, Ent. Nachr. 20, p. 228.  
*medontias* Mycal. *Hew.* Exot. Butt. Mycalesis t. 9 f. 56, 57.\*  
*melusina* Mycal. *F.* Mant. Ins. 2, p. 43.  
*menamena* Henot. *Mab.* Pet. Nouv. Ent. 2, p. 158.  
*mesogena* Mycal. *Karsch*, Ent. Nachr. 20, p. 236, 240.  
*microocellata* Ypthima *Strand*, Ent. Zeitschr. 23, p. 113.  
*milyas* Mycal. *Hew.* Exot. Butt. Mycalesis t. 6 f. 31.\*  
*minchini* Gnoph. *Heron*, Trans. Zool. Soc. Lond. 19, p. 143.\*  
*mintha* Lepton. *Geyer* in Hbn. Ztr. Exot. Schm. 5, p. 15.\*  
*miriam* Mycal. *F.* Ent. Syst. 3: 1, p. 242.  
*mollitia* Mycal. *Karsch*, Ent. Nachr. 21, p. 281.  
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*nandina* Mycal. *Ansorge*, Under the African Sun., p. 316.  
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*narycia* Pseudon. *Wallgr.* Rhopal. Caffr., p. 32.  
*natalii* Neocoen. *Bdv.* Voyage Deleg. 2, p. 593.  
*nebulosa* Mycal. *Fldr.* Novara Lep., p. 502.  
*neglecta* Mycal. *Thur.* Berl. Ent. Zeitschr. 48, p. 119.  
*neita* Pseudon. *Wallgr.* Oefvers. Vet. Akad. Förhl. 32: 1, p. 84.  
*nigrescens* Henot. *Baker*, Ann. Mag. Nat. Hist. (8) 2, p. 470.

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*nobilis* Mycal. *Auriv.* Ent. Tidskr. 14, p. 269.\*  
*noblemairei* Mycal. *Janet*, Bull. Soc. Ent. Fr. 1894, p. 256.  
*nyassae* Melan. *Bartel*, Nov. Zool. 12, p. 130.

*obscura* Mycal. *Auriv.* Ent. Fidskr. 22, p. 114.  
*occidentalis* Ypthima *Bartel*, Nov. Zool. 12, p. 134.  
*ocelligera* Mycal. *Strand*, Soc. Ent. 25, p. 5.  
*ochracea* Henot. *Lathy*, Trans. Ent. Soc. Lond. 1906, p. 1.\*  
*oxylus* Lepton. *Trim.* Trans. Ent. Soc. Lond. 1881, p. 437.

*paetula* Pseudon. *Trim.* Trans. Ent. Soc. Lond. 1891, p. 169.  
*panda* Physc. *Bdv.* Voyage Deleg. 2, p. 594.  
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*parallelopillata* Neocoen. *Karsch*, Ent. Nachr. 23, p. 370.  
*parmeno* Gnoph. *Dbl. & Hew.* Gen. Diurn. Lep. S. 61 f. 2.\*  
*parva* Henot. *Btlr.* Ann. Mag. Nat. Hist. (5) 4, p. 228.  
*parvidens* Henot. *Mab.* Ann. Soc. Ent. Fr. (5) 9, p. 343.  
*passandava* Henot. *Ward*, Ent. Monthl. Mag. 8, p. 122.  
*pavonis* Mycal. *Btlr.* Ann. Mag. Nat. Hist. (4) 18, p. 481.  
*peitho* Henot. *Ploetz*, Stett. Zeit. 41, p. 197.  
*perdita* Henot. *Btlr.* Ann. Mag. Nat. Hist. (5) 2, p. 283.  
*perspicua* Henot. *Trim.* Trans. Ent. Soc. Lond. 1873, p. 104.\*  
*phaea* Henot. *Karsch*, Ent. Nachr. 20, p. 232.  
*phalanthus* Mycal. *Stgr.* Exot. Schm. 1, p. 229.\*  
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*ploetzi* Mycal. *Bartel*, Nov. Zool. 12, p. 132.  
*pluripupillata* Ypthima *Strand*, Ent. Zeitschr. 23, p. 114.  
*procora* Mycal. *Karsch*, Berl. Ent. Zeitschr. 38, p. 210.  
*punctifera* Mycal. *Strand*, Iris 22, p. 105.  
*pupillaris* Ypthima *Btlr.* Proc. Zool. Soc. 1888, p. 59.  
*pythia* Gnoph. *F.* Ent. Syst. 3: 1, p. 116.

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*quadripunctata* Ypthima *Strand*, Ent. Zeitschr. 23, p. 114.  
*quinquepunctata* Ypthima *Strand*, Ent. Zeitschr. 23, p. 114.

*rakoto* Ypthima *Ward*, Ent. Monthl. Mae. 7, p. 30.  
*ratrayi* Elymn. *E. Sharpe*, Entomolog. 35, p. 41.  
*rhacotis* Mycal. *Hew.* Exot. Butt. Mycalesis t. 8, f. 50.\*  
*rufilineata* Neocoen. *Btlr.* Proc. Zool. Soc. 1894, p. 559.  
*rufiplaga* Coenrya *Trim.* Trans. Ent. Soc. Lond. 1906, p. 59.\*

*sabacns* Pseudon. *Trim.* Rhop. Afr. Austr., p. 200.\*  
*safitza* Mycal. *Hew.* Gen. Diurn. Lep., p. 394 note.\*  
*sambulos* Mycal. *Hew.* Exot. Butt. Mycalesis t. 10 f. 63, 64.  
*sandace* Mycal. *Hew.* Exot. Butt. Mycalesis t. 10 f. 65.  
*saussurei* Mycal. *Dew.* Nov. Acta Acad. Nat. Cur. (2) 41: 2, p. 17.\*  
*schultzei* Pseudon. *Grünb.* Denkschr. med. nat. Ges. Jena 16, p. 100.\*  
*seiathis* Mycal. *Hew.* Exot. Butt. Mycalesis t. 8, f. 55, 56.\*  
*sebetus* Mycal. *Hew.* Exot. Butt. Mycalesis t. 10, f. 6, 7.\*  
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*semicoeca* Mycal. *Strand*, Soc. Ent. 25, p. 6.  
*septemocellata* Ypthima *Strand*, Ent. Zeitschr. 23, p. 114.  
*simonsii* Henot. *Btlr.* Ann. Mag. Nat. Hist. (4) 19, p. 458.  
*simplicia* Ypthima *Btlr.* Ann. Mag. Nat. Hist. (4) 18, p. 481.  
*simpliciocellata* Ypthima *Strand*, Ent. Zeitschr. 23, p. 112.  
*smithi* Ypthima *Mab.* Pet. Nouv. Ent. 2, p. 157.  
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*sophrosyne* Mycal. *Plötz*, Stettin. Ent. Zeit. 41, p. 196.  
*strato* Henot. *Mab.* Ann. Soc. Ent. Fr. (5) 8, Bull., p. 76.  
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*submaevius* Henot. *Strand*, Soc. Ent. 25, p. 6.  
*subocellata* Mycal. *Bartel*, Nov. Zool. 12, p. 131.  
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*subsimilis* Henot. *Btlr.* Ann. Mag. Nat. Hist. (5) 4, p. 228.  
*sufferti* Ypthima *Auriv.* Rhopal. Aethiop., p. 76.\*

*taenias* Mycal. *Hew.* Exot. Butt. Mycalesis t. 10, f. 66. \*  
*tamatavae* Ypthima *Bdv.* Faune Madag., p. 60. \*  
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*tolosa* Mycal. *Plötz.* Stettin. Ent. Zeit. 41, p. 197.  
*transiens* Mycal. *Bartel.* Nov. Zool. 12, p. 131.  
*trimeni* Pseudon. *Btlr.* Cat. Satyr., p. 94.  
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*triocellata* Ypthima *Strand.* Pnt. Zeitschr. 23, p. 112.  
*triophthalma* Ypthima. *Mab.* Hist. Madag. Lep. 1, p. 28. \*  
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*turbata* Henot. *Btlr.* Ann. Mag. Nat. Hist. (5) 5, p. 334.  
  
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*ugandae* Elymn. *Grünb.* Sitzber. Ges. Nat. Fr. Berlin 1003, p. 54. \*  
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*victoriae* Neocoen. *Auriv.* Rhopal. Aethiop. p. 72. \*  
*victorina* Henot. *Westw.* Oates Matabele Land, p. 350.  
*vigilans* Pseudon. *Trin.* S.-Afr. Butt. 1, p. 84.  
*vinsoni* Ypthima *Guen.* Vinson Voyage Lepid., p. 39.  
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## 5. Family : Nymphalidae.

The Nymphalids present in many respects a centre, round which the rest of the *Rhopalocera* may be grouped, and by their variety of form and beauty of colouring, as well as their specialized larvae and pupae, are altogether a very noteworthy section of the butterflies. They have in common with the Danaids and Satyrids the abortion of the forelegs in both sexes; but they differ from both in having the cell of the hindwing open or only closed by a fine transverse vein and the palpi not compressed. The hindwing forms at the inner margin a groove, which surrounds the abdomen. In this the Nymphalids differ from the Acraeids, which are otherwise very nearly allied. The abdomen is always shorter than the inner margin of the hindwing and is posteriorly more or less conically pointed.

The Nymphalids are in general very strongly built, with thick, muscular thorax, and have accordingly a very swift and sustained flight. In spite of this many species can be captured without difficulty, as they have a habit of returning again and again to the same place or the same flower. They are mostly fond of open, sunny places, but some are peculiar to the shady forest-clearings and these have a correspondingly darker colouring, but often with a beautiful blue or greenish reflection.

Among the Ethiopian Nymphalids there are very pronounced examples of mimicry of other butterflies (*Pseudacraea*) and also species which occur in quite differently coloured forms, but independently of the seasons (*Hypolimnas*, the females of *Charaxes etheocles*). Further details will be given in the separate genera and species.

The sexes are usually similar; the surest distinction between them is in the different structure of the forelegs. In some genera, however, (*Cynandra*, *Euryphene*, *Diestogyna*, *Cymothoë* and many species of *Charaxes*) the females differ so entirely from the males in colour and markings that their identity can only be ascertained by studying them in nature.

The larvae, so far as they are known, are distinguished by their stiff, often branched spines. The number and development of these spines vary in the different groups and genera and occasionally they occur only on the head. Our knowledge of the Ethiopian Nymphalid larvae is extremely defective and every student of *Lepidoptera* living in Africa can render great service to science by breeding the butterflies from the larvae and describing and figuring the latter. Only by rearing a species in large numbers from the larva will it be possible to establish with certainty the sexes of many species and their range of variation. Great and important discoveries (cf. under *Hypolimnas dubius*) have already been made in this way and many other problems still await solution. The pupae are always suspended free by the anal end, often ventricose and provided with one or more protuberances.

The Nymphalids are distributed over all parts of the world, but occur in the greatest abundance and the most numerous forms in the tropics of America. In the Ethiopian Region they are represented by 41 genera and about 490 species. Of the genera 29 (*Lachnoptera*, *Smerina*, *Antanartia*, *Vanessula*, *Catacroptera*, *Apaturopsis*, *Neptidopsis*, *Mesoxantha*, *Crenis*, *Pseudacraea*, *Pseudoneptis*, *Catuna*, *Pseudargynnis*, *Cynandra*, *Aterica*, *Hamanumida*, *Euphaedra*, *Euryphene*, *Diestogyna*, *Crenidomimas*, *Harmilla*, *Euryphaedra*, *Euryphura*, *Cymothoë*, *Euptera*, *Pseudathyma*, *Euxanthe* and *Palla*) are peculiar to this fauna, not occurring at all in the other regions. These genera are represented by more than 250 species and hence embrace at least 50% of the Ethiopian Nymphalids. The remaining, non-endemic genera almost all occur again in the southern parts of Asia.

Of the Ethiopian Nymphalid species there are only eight (*Atella phalantha*; *Argynnis hyperbius*; *Pyrameis cardui*; *Precis orithya*; *Precis oenone*; *Hypolimnas bolina*; *Byblia ilithya*; and *Charaxes jasius*) which also occur in other regions. Four of these, however, have developed special local races in Africa.

In Africa itself the Nymphalids are best developed in the West African subregion; here occur not only the majority of the species, but also representatives of all the genera peculiar to Africa with the exception of *Smerina*, which occurs only on Madagascar. Here, too, are found the largest and most beautiful of the African Nymphalids, which in this region have become true forest insects.

As regards their morphological characters, including those of their early stages, the Nymphalids are not so uniform as the Satyrids or Pierids, but present great differences and hence are susceptible of subdivision into several well differentiated subfamilies.

The Ethiopian Nymphalids belong to eight subfamilies, which can be distinguished without difficulty by means of the following synopsis.



## Synopsis of the Subfamilies.

- I. Veins 7 and 8 of the forewing always much longer than their common stalk. The precostal vein of the hindwing always arising far beyond the point where vein 8 separates from the upper median.
  1. *Charaxidinae*.
- II. Veins 7 and 8 of the forewing always much shorter than their common stalk.
  - A. The precostal vein of the hindwing almost always arising before or at the point where vein 8 separates from the cell (only in *Catuna* and *Aterica* after this point). The club of the antenna always gradually thickened, elongate and irregularly rounded. The foretarsus of the female only with spines at the 2nd—4th or 3rd—4th joints.
    - a) Vein 8 of the forewing runs into the distal margin. The distal margin of the hindwing never obcordate at vein 2 and at the same time with a tail at vein 4.
      - \* The precostal vein of the hindwing arises nearer to the base than to vein 7. 2. *Nymphalinae*.
      - \*\* Veins 5—7 of the hindwing arise close together and so near to the base that the precostal vein is further from the base than from vein 7. 3. *Neptidinae*.
    - b) Vein 8 of the forewing runs into the costal margin of the apex. The distal margin of the hindwing notched at vein 4 and with an obtuse lobe between veins 1 b and 2, close to the latter. 4. *Marpesiinae*.
  - B. The precostal vein of the hindwing always arising after the separation of vein 8 from the cell. The club of the antenna moderately long and usually flattened. The foretarsus of the female with spines on joints 1—4.
    - a) The lower median vein of the forewing to the beginning of vein 2, and vein 12 at the base slightly but distinctly thickened. 5. *Eunicinae*.
    - b) The lower median vein of the forewing not inflated or thickened.
      - \* Vein 12 of the forewing swollen at the base into a large oval bladder. 6. *Eurytelinae*.
      - \*\* Vein 12 of the forewing not swollen.
        1. The palpus not inflated. 7. *Vanessinae*.
        2. The middle joint of the palpus inflated, light coloured, clothed with black bristly hairs. 8. *Argynnidinae*.

1. Subfamily: *Charaxidinae*.

Widely as the *Charaxidinae* may differ superficially, they are always easy to recognize by the characters given in the synopsis. The genus *Euxanthe* differs so much from *Charaxes* in shape, markings and colouring that their relationship was formerly not suspected. But the examination of the neuration showed at once that *Euxanthe* must be a near ally of *Charaxes* and this has since been fully proved by the discovery of the earlier stages. Many lepidopterists do not trouble themselves at all about the arrangement of the wing-veins and consider such investigations as unnecessary or too difficult. They are, however, at least in the butterflies, very simple if the wings are examined from beneath and in this way an insight is obtained into the real relationship of the forms and merely superficial resemblances cannot deceive. Thousands of species of *Lepidoptera* have been referred to wrong genera and hundreds of genera classified in incorrect families because so many authors have neglected to examine carefully the structure of their favourites.

The larvae of the *Charaxidinae* are very characteristic. Their body is entirely unarmed, thickest at or somewhat before the middle and then gradually tapering both anteriorly and posteriorly; the surface is naked but finely granulated and at the anal extremity there are two obtuse prominences. The head is large, much thicker than the first thoracic segment, with the mouth obliquely directed anteriorly, and bearing at the posterior margin four long, finely dentate spines. All the species yet known have a bright green ground-colour, usually interrupted by a few lighter dorsal patches. They are very sluggish and often do not quit the twig on which the egg was laid.

The pupae are very thick, rounded and quite smooth; the dorsum is strongly convex and the head has two very obtuse points; the terminal segment has two small, rounded protuberances at the anterior margin

and four others at the tip round the base of the cremaster. The latter sometimes forms a right angle with the longitudinal axis of the pupa.

The eggs are hemispherical, somewhat flattened, with fine radiating ribs at the upper end.

The *Charaxidinae* love wooded country and hence occur in much larger numbers and in more numerous species in the West African forest-region. Some few species, as for instance *Charaxes pelias*, occur also in more open country, but are fond of flying near small trees and shrubs. In South Africa most species are wanting in Cape Colony and first occur in the more wooded parts of Kaffirland proper and Natal. As the habits of *Euxanthe* and *Charaxes*, as well as the whole habitus, are quite different, further particulars will be given under the genera.

#### Synopsis of the Genera.

- I. Hindwing uniformly broadly rounded, without angles or tails. Palpus black with white dots.
  1. *Euxanthe*.
- II. Hindwing nearly always angled or tailed. Palpus beneath with light longitudinal stripe but without white dots.
  - A. Middle and hindtibiae with spines on both sides. The wings beneath never densely striated with fine dark transverse lines.
    2. *Charaxes*.
  - B. Middle and hindtibiae only beneath with spines, above unarmed. The wings beneath in part densely striated with short, fine brown transverse lines.
    3. *Palla*.

#### 1. Genus: **Euxanthe** Hbn.

This genus only occurs in Africa and consists of large, broad-winged species. In the ♂ the wings, especially the forewing, are shorter and broader than in the ♀ and the distal margin of the forewing is nearly straight before the middle and forms a distinct angle with the costal margin. The hindwing is rounded, without appendages.

The species of *Euxanthe* only occur in the warmer, wooded districts of Africa and on Madagascar. To the south they only extend to Delagoa Bay; they are shy and have an irregular, but not rapid flight; they are attracted with sugar, like moths. The species may be divided into two easily distinguished groups.

#### First Group.

The forewing above at the base with a large, triangular, red-brown or yellow-brown spot. The cell of the hindwing closed; that of the forewing almost triangular and its posterior angle not or but little more produced than the anterior. — Subgenus *Hypomelaena* Auriv.

**E. trajanus** Ward (29 f). Ground-colour of both wings black; the forewing in the ♂ above and beneath *trajanus*. with a yellow-brown basal spot, a light yellow transverse band across the middle, a curved row of seven submarginal spots, of which the anterior ones are larger, and two or three small white spots before the apex; the hindwing above is bluish white in the middle and has small white dots close to the distal margin; beneath it is black with deep black rays between the veins and narrowly red-brown at the base. The ♀ has white markings and the basal part of the hindwing on both surfaces is white to far beyond the middle and from the inner margin to vein 7; the black marginal band is consequently much narrower than in the ♂, but encloses two rows of white spots. — In West Africa from the Niger to Angola.

**E. tiberius** Smith is very similar to the preceding species, but differs in the ♂ in having the hindwing *tiberius*. above unicolorous black in the middle, but with 1—3 submarginal spots before the apex; also in the median band of the forewing being narrower and greenish. The ground-colour of the hindwing beneath is bright brown instead of blackish, and hence the dark interneural streaks stand out more sharply than in *trajanus*. The ♀ only differs from that of *trajanus* in having the white discal area of the hindwing much narrower, not extending beyond the middle and not reaching the base; the ground-colour of the under surface of both wings is red-brown. The ♀ somewhat recalls *Danaida formosa* in colour and markings. German and British East Africa.

#### Second Group.

The forewing without red-brown basal spot. The cell of the hindwing open. That of the forewing obtusely rounded at the anterior end and long produced at the hinder angle, so that it is almost semicircular in shape. — In all the species the wings have a black, or beneath sometimes brown ground-colour; the forewing has 2—4 transverse rows of light spots and the hindwing a larger or smaller light central area and beyond the middle 2 or 3 curved rows of light, rounded spots or dots. The abdomen towards the tip yellow on both sides, or at least beneath.



*madagascariensis.*

**E. madagascariensis** Lucas (29 e). The forewing only with two transverse rows of light spots, one across the middle composed of 7 large, oblong spots in cellules 1 b—6 and one near the distal margin of small rounded spots, and with 2—4 small light spots in the cell; the hindwing with light central area and beyond the middle above with one, beneath with 2 or 3 curved rows of rounded spots, the proximal half of cellule 7 on the hindwing unicolorous without light longitudinal stripes. The hindwing beneath with rust-brown ground-colour. Abdomen above black, beneath ochre-yellow. ♂: markings light green; the central area of the hindwing small, above only composed of 4 spots, in cellules 4—6 and in the cell, beneath also of a few small spots in 1 a—1 c. ♀: all the markings white; the median area of the hindwing very large, nearly reaching the base and extending far beyond the middle, covering the base of cellules 1 a—6; hindwing above at the anal angle cinnamon-brown; bears a distant resemblance to *Amauris nossima*. — Madagascar, in the forest-region of the east coast.

*wakefieldi.*

**E. wakefieldi** Ward (29 f). Forewing with 3 transverse rows of light spots; the second composed of 3 spots in cellules 4—6. A large spot at the apex of the cell. Abdomen yellow above as well as beneath. The central area of the hindwing in the ♂ somewhat larger than in the preceding species. Otherwise agrees almost entirely with it. In East Africa, from Delagoa Bay to British East Africa.

*eurinome.*

*ansellica.*

**E. eurinome** is very similar to the two preceding species, but is at once distinguished by having the median band of the forewing, as the figure shows, broken up into elongated, widely separated and irregularly placed spots; it is specially to be remarked that the spot in cellule 3 is removed widely distad. The spots in the ♂ light green. Abdomen yellow. — **eurinome** Cr. ♂: the central area of the hindwing whitish. ♀: all the markings milk-white; the central area of the hindwing is large, extending beyond the middle, and forms a large spot in cellule 3. Sierra Leone to the Niger. — **ansellica** Btlr. (29 f, erroneously called *eurinome*). ♂: the central area of the hindwing light green like the rest of the markings; ♀: all the markings greenish white; the central area of the hindwing is smaller, not or scarcely reaching the middle and forming at most a small indistinct spot in cellule 3. Is the southerly race, occurring from the Cameroons to Angola and Unyoro.

*crossleyi.*

*ansorgei.*

**E. crossleyi** differs in both sexes from all the other species in cellule 7 on the hindwing above and beneath having a long, light longitudinal stripe, extending from the base to beyond the middle. The spots of the median band are arranged almost as in *eurinome*. The abdomen is yellow and the markings in the ♂ light greenish, in the ♀ yellowish white. — In **crossleyi** Ward the light basal area of the hindwing is large, extending to beyond the middle and distally broken up into rays, which are always in the ♀, and usually also in the ♂, united with the large, rounded spots in the first curved row. A rare form distributed from the Cameroons to Angola and Aruwimi. — **ansorgei** Rothsch. & Jord. is the East African race, which was discovered in Uganda, and only differs in having the light basal area of the hindwing much smaller and completely separated from the submarginal spots.

## 2. Genus: **Charaxes** O.

The forewing is broad and usually sharply triangular with the distal margin straight or emarginate and almost as long as, or even longer than the straight hindmargin. The hindwing is more or less produced, angled or lobed at the anal angle, and has usually two tail-like appendages at the extremities of veins 2 and 4, or is at least angled at these veins. Occasionally the ♂ is tailless and the ♀ has an appendage at vein 4 or the ♂ has one small tail (at vein 2) and the ♀ two. The costal margin of the hindwing strongly curved. The antenna almost reaches the middle of the costal margin of the forewing and has a gradually thickened, irregularly rounded club, obtusely rounded off at the tip. The thorax is very thick and strongly built, hence *Charaxes* possesses very highly developed and sustained powers of flight. The wing-veins are also thick and strong and the costal margin of the hindwing is armed with small, sharp teeth.

The species are often gorgeously coloured and beautifully marked on both surfaces and the genus may be regarded as one of the finest among the Nymphalids.

They very rarely if ever visit flowers, but are attracted by the sap exuding from trees, by rotten fruit, excrement and other ill-smelling substances, and hence can often be baited, especially as they have the habit of returning repeatedly to the same place. The ♂♂ also visit wet places and small puddles and are consequently more easily caught than the ♀♀, which are mostly very rare in collections.

About two-thirds of the known *Charaxes* species occur in the Ethiopian Region. Only a single African species, *Ch. jasius*, also occurs outside the region, being widely distributed on the Mediterranean.

## Synopsis of the Groups.

In order to facilitate the determination of the numerous forms we divide them into groups.

I. The basal part of cellules 1 a—1 c on the hindwing beneath variegated with light and dark longitu-

dinal streaks. The basal half of the under surface of both wings deep red-brown or black with numerous sharply defined, large, black to grey spots or streaks bordered with white or silver.

1. *Jasius Group*.

II. Cellules 1 a and 1 b on the underside of the hindwing at least to the end of vein 1 a usually unicolorous without markings, rarely with dark transverse streaks and very rarely with lighter longitudinal rays, in which case, however, the basal half of the under surface has no black, light-bordered spots or the veins are green.

A. Forewing beneath in cellule 1 b near the hinder angle with one large or two smaller, usually very prominent, black spots, which form sometimes the pupil, sometimes the bordering of a large eye-spot, sometimes also are quite free.

a) Hindwing at the anal angle between veins 1 b and 2 produced into a broad lobe which is united with a small, obtuse tail at vein 2.

2. *Zingha Group*.

b) Hindwing at the anal angle not produced into a lobe but usually with a long tail at vein 2.

\* Veins brown or whitish, never green.

1. Cell of the hindwing beneath with dark transverse streaks. Hindwing never red.

§ The markings in the middle of the underside of the hindwing terminate at vein 8 and are not continued to the costal margin. The costal margin is therefore unicolorous, white or whitish green, from the precostal vein to far beyond the middle.

3. *Etesipe Group*.

§§ The markings in the middle of the underside of the hindwing are continued to the costal margin.

† Cell of the forewing beneath with red-brown markings on lighter or darker ground. Hindwing above with continuous red-yellow marginal band.

4. *Cynthia Group*.

†† Cell of the forewing beneath deep black with white spots.

8. *Nobilis Group*.

††† Cell of the forewing beneath with black markings, often bordered with white, on lighter ground.

\* Hindwing above almost wholly white.

7. *Hadrianus Group*.

\*\* Hindwing above not mostly white.

a) Cell of the forewing beneath with a dark spot at the base and two nearly straight transverse streaks, or the first transverse streak broken up into two spots of unequal size.

0. Wings above black and red-brown or in the ♀ blackish, with common white median band and the base of the costal margin on the forewing rust-brown.

5. *Lucretius Group*.

00. Wings above with black ground-colour (often with blue reflection) and white or blue markings, in the ♀ occasionally olive-green.

6. *Tiridates Group*.

b) Cell of the forewing beneath in the basal half with three free, rounded, dark dots and then with a transverse streak, deeply curved distad in the middle.

9. *Etheocles Group*.

2. Cell of the hindwing beneath with 4 black spots. Hindwing with red ground-colour.

10. *Acraeoides Group*.

\*\* Veins green or greenish, especially at the base and on the under surface.

§ Hindwing above with silver spots.

11. *Jahlusa Group*.

§§ Wings above without silver spots.

12. *Candiope Group*.

B. Forewing beneath in cellule 1 b near the hinder angle without black spot or spots, rarely (in the *Varanes Group*) with slight indication of two dark dots.

a) Hindwing at least with one long tail, above never black with blue markings.

\* Hindwing at vein 2 not or only shortly tailed.

§ Veins greenish at the base. Veins 3 and 4 of the hindwing not stalked.

13. *Varanes Group*.

§§ Veins not greenish. Veins 3 and 4 of the hindwing distinctly stalked.

14. *Lichas Group*.

\*\* Hindwing in both sexes with a long tail at vein 2, in the ♀ also with one at vein 4.

15. *Zoolina Group*.

b) Hindwing with the margins entire or only weakly dentate; occasionally in the ♀ with a tail at vein 4, but the wings in this case above deep black with blue markings.

\* Ground-colour of both wings light green.

16. *Eupale Group*.

\*\* Ground-colour of the wings not green.

§ Wings above yellow-red to brown-yellow with black-brown markings and in both sexes without tail.

17. *Nichetes Group*.



§§ Wings above deep black with blue markings. Hindwing in the ♂ without tail, in the ♀ with a small but distinct tail at vein 4. 18. *Laodice Group*.

### 1. *Jasius Group*.

A very distinct group on account of the number and variety of the markings on the under surface of both wings, in particular the alternate light and dark longitudinal lines at the inner margin of the hindwing in cellules 1 a, 1 b (and 1 c). Both sexes have two tails at the distal margin of the hindwing, one at vein 4 and a longer one at vein 2; sometimes there is also a shorter tail at vein 3. Both wings have usually on the upper surface a light discal band, which is often sharply defined, but, when the ground-colour is light, occasionally shades into it without any sharp dividing line.

**Ch. *jasius*** differs from all the other species in wanting the discal band, so that both wings are unicolorous or almost unicolorous black-brown above to far beyond the middle. Forewing above with a broad brown-yellow marginal band, more or less divided by the black veins, preceded by a sometimes indistinct row of much smaller brown-yellow submarginal spots. Hindwing above with a similar brown-yellow or yellowish marginal band, which, however, is separated from the margin itself by a black terminal line, becomes narrower towards the anal angle and is there suffused with grey or grey-greenish. — In the type-form *jasius* L. (= *jason* L.) (vol. 1, 52 b, c) the hindwing above has no submarginal spots or only 3 or 4 small, separate blue ones before the marginal band in cellules 1 c—3 and the forewing bears distinct submarginal spots. To the south of the Sahara, hence in the Ethiopian Region, Lieutenant A. SCHULTZE found at Hossere Markoli a specimen which is almost identical with the type-form, only differing in the absence of the brown-yellow submarginal spots of the forewing and in the hindwing having 4 or 5 slightly larger blue submarginal spots in cellules 1 c—4 (5). In these characters it approaches the following form and proves that that is only a geographical race of *jasius*. — *epijasius*. — ***epijasius* Reiche** (30 a) differs in having the marginal band on both wings broader and lighter, the submarginal spots of the forewing absent or only occurring near the costal margin and especially in having the blue submarginal spots on the upperside of the hindwing united into a broad blue transverse band, extending from the anal angle to vein 5, 6 or 7. — Larva beneath greenish white, above bright green with two rounded, eye-like dorsal spots (on segments 6 and 8) and a fine yellowish lateral line, beginning at the fourth segment and separating the darker upper from the lighter underside; the four long horns on the head reddish at the tip; the head with yellow lateral line. Occurs to the south of the Sahara from Senegambia to the Nile, in *maculatus*. Unyoro and Abyssinia. — ab. ***maculatus* Suff.** has like *jasius* seven yellow-brown submarginal spots on the upperside of the forewing, but otherwise quite agrees with *epijasius*. From the island of Konakry off the coast of Senegambia.

**Ch. *brutus***. Both wings above black or black-brown with a common white or whitish yellow discal band, which on the forewing is broken up into spots towards the costal margin. Marginal spots wanting; but the hindwing has before the distal margin 2—4 small blue spots, 2 in cellule 1 c and one each in 2 and 3. The under surface has a continuous white discal band; the ground-colour of the basal part is red-brown with the black, white-edged markings peculiar to the genus, which stand out sharply; the marginal part is brown-yellow next to the discal band and then ornamented with large, triangular black spots, distally bordered with pale grey. The hindwing also at vein 3 with a distinct, but short tail. — ***brutus* Cr.** (30 a). The discal band on the upper surface pure white, not or only indistinctly margined with blue, on the forewing also with a spot in cellule 7 and measuring 5—9 mm. in breadth in cellule 1 b. Sierra Leone to the Niger. — ***natalensis* Stgr.** only differs in having the discal band distinctly margined with blue and the small marginal spots somewhat more distinct than in the type-form. East Africa from Natal to Kilimandjaro. — ***angustus* Rothsch.** (30 a) has the discal band much narrower, only 2.5—4 mm. in breadth in cellule 1 b of the forewing, and the marginal spots of the forewing very small or entirely suppressed. Old Calabar to Angola. — In ***andara* Ward**, from Madagascar, the median band in the ♂ is about as broad as in the type-form, but broadly margined with blue and without light spots in cellules 6 and 7 of the forewing. In the ♀, on the other hand, the spots in cellules 3—7 of the forewing are enlarged, orange-yellow, and in cellules 6 and 7 divided into two spots. — ***junius* Oberth.** is distinguished by having the discal band on the upper surface light yellow and in cellule 1 b of the forewing 6—7 mm. in breadth. Abyssinia. — ***somalicus* Rothsch.** only differs from *junius* in the somewhat narrower median band on both wings. Somaliland.

**Ch. *ansorgei* Rothsch.** is nearly allied to the preceding species, but has the basal part of the forewing above chestnut-brown, not black; the discal band of the hindwing is bluish white. ♂: discal band of the forewing ochre-yellow, continuous to vein 4, then broken up into spots, one each in cellules 4 and 7 and two each in 5 and 6; on the proximal side of the discal band the ground-colour forms black spots in cellules 2—6; small light marginal dots; hindwing with orange-yellow submarginal spots in cellules 2—7 and 2 blue spots in 1 c; the tail at vein 4 somewhat shorter than that at vein 2. The ♀ is larger than the ♂ and has the median band on the forewing white, only at the costal margin somewhat yellowish; the tails of the hindwing are longer than in the ♂ and the anterior longer than the posterior. A rare species, only met with as yet in British East Africa in Nandiland and the Kikuyu forests.

**Ch. *castor*** has the ground-colour of the upper surface deep black, as in *brutus*; the median band is



light ochre-yellow, on the forewing anteriorly double, being composed in cellules 2—6 of two more or less completely separated spots, on the hindwing short and triangular, reaching at most to vein 3. On the under surface the white-bordered markings of the basal area are deep black. — **castor** Cr. (30 a) has a light orange-yellow median band and the light marginal spots of the forewing are absent or very small; the ground-colour of the under surface is in the basal part red-brown or pure black (= ab. **godarti** Auriv., 30 b). Senegambia to the Congo and Uganda. — **flavifasciatus** Btlr. is the East African race, which occurs from Delagoa Bay and Nyassaland to Somaliland and only differs in the lighter median band and the more distinct marginal spots on the upperside of the forewing; in this form also the ground-colour in the basal part of the under surface is sometimes red-brown, sometimes pure black (= ab. **reimeri** Rothsch.). — **comoranus** Rothsch. agrees with the West African form as regards the colour of the discal band on the upper surface, but differs in the transverse band which accompanies the white discal band of the upper surface on its distal side; this is yellow on the forewing and red-brown on the hindwing and — unlike that of all the continental forms — broken up into spots. Island of Great Comoro. *castor.*  
*godarti.*  
*flavifasciatus.*  
*reimeri.*  
*comoranus.*

**Ch. pelias** has almost the same markings as *castor*, but is smaller and much lighter, the basal part of the upper surface being dark red-brown and the light-bordered markings of the under surface centred with grey; the discal band of the upper surface is orange-yellow and the orange-yellow marginal spots of the forewing are large and distinct. The discal band of the under surface is white and distally bordered on the forewing by triangular orange-yellow spots, on the hindwing by deep red-brown ones; the ground-colour of the basal part beneath is red-brown. — **pelias** Cr. (30 b). The black spots which adorn the discal band on the upperside of the forewing in cellules 2—7 are as large as, or larger than the triangular orange-yellow spots which they separate; the black marginal line of the hindwing very thick; on the underside of the hindwing the red-brown spots at the distal side of the white discal band are very small, much narrower than the band. Cape Colony, in the mountainous western parts. The larva probably on *Protea grandiflora*, the „Wagenboom“. — In **saturnus** Btlr. (30 b) the black spots in the discal band of the forewing are smaller than the orange-yellow spots which they border proximally; the black marginal line of the hindwing much thinner than in the type-form; on the underside of the hindwing the red-brown spots are large and at least as broad as the band; the marginal spots on the upper surface are sometimes little larger than in the type-form, sometimes very large, as in the specimen figured (ab. **laticinctus** Btlr.). From Natal to the Congo and British East Africa. — ab. **brunnescens** Rothsch. has the basal part of the upper surface brown-black, the discal band darker orange-yellow than in *saturnus* and the marginal spots small and brown. North Angola. *pelias.*  
*saturnus.*  
*laticinctus.*  
*brunnescens.*

**Ch. hansali** Fldr. closely approaches the preceding species in the markings, but has a broad light yellow discal band extending to the inner margin of the hindwing and the basal part of the upper surface is darker black-brown; the distal yellow spots in cellules 3—7 of the forewing are small and completely separated from the band; the yellow spots at the distal margin of the hindwing are streak-like and completely separated from the distal margin by the thick black marginal line; the tails are longer than in *pelias*; the light-bordered spots in the basal part of the under surface have grey centres, as in *pelias*. Abyssinia and the adjacent parts of Somaliland. — **baringana** Rothsch. only differs from the type-form in the narrower discal band of the upper surface and the free red-brown spots at the distal side of the median band on the hindwing beneath. At Lake Baringo in British East Africa. *hansali.*  
*baringana.*

The six following species are distinguished by having the white markings on the under surface more or less silvery. The median band of the hindwing is of fairly uniform width and reaches the inner margin. The basal part of the upper surface is red-brown and usually not or but little darker than the discal band, which is consequently not very sharply defined basally.

**Ch. pollux** Cr. (30 b). The discal band of the upper surface is dark orange-yellow; the tails of the hindwing only 3—4 mm. in length; the hindwing above with a deep black, unspotted marginal band, 9—10 mm. in breadth; the forewing with small brown marginal spots. On the under surface the black, white-bordered spots are almost as numerous as in the preceding species and on the hindwing there are three in cellule 8 and two in cellule 7. Sierra Leone to Angola and Uganda. — **geminus** Rothsch. differs in having small brown marginal spots on the hindwing above, at least in cellules 4—6. Manicaland, Nyassaland, Kilimandjaro. *pollux.*  
*geminus.*

**Ch. phoebus** Btlr. (30 c) is near the preceding species, but is distinguished at once by both wings above having the marginal spots large, connected or only separated by the black veins; the median band is very broad and in the ♀ white or whitish on the hindwing and at the hindmargin of the forewing; on the under surface the ground-colour of the basal part is dull grey-brown, not bright red-brown as in *pollux*. Abyssinia. *phoebus.*

**Ch. phraortes** Dbl. is similar to the two preceding species, but has the tails on the hindwing much longer, 8—9 mm. in length; the basal part of the upper surface is light red-brown and but little darker than the broad orange-brown median band; the cell of the forewing with two large black spots and the median band with large black spots in cellules 2—4; the hindwing above at the distal margin with orange-yellow transverse spots in 2—7; the hindwing beneath, as in the preceding, with three black, white-bordered transverse spots at the costal margin in cellule 8; the ground-colour of the basal part bright red-brown. Madagascar; rare. *phraortes.*

**Ch. andranodorus** Mab. This rare species is one of the most magnificent forms of *Charaxes*. Above it agrees very nearly with *phraortes*, the basal part of both wings being not or scarcely darker than the medi- *andranodorus.*



an band; on the forewing, however, the median band is separated from the basal area by large black spots in cellules 1 b—6; the marginal spots of the hindwing are streak-like and much smaller than in *phraortes* and the distal margin is distinctly tailed also at vein 3. Beneath both wings have the ground-colour red-brown and the white markings have a silvery gloss and are broader than usual; the black markings in the basal part of the hindwing, on the other hand, are reduced in number, so that cellule 7 and cellule 8 each have only one small transverse spot; in the silvery median band, on the contrary, several black spots are placed behind vein 5. Madagascar; very rare.

*druceanus*.

**Ch. druceanus** *Btlr.* (30 c) is above similar to the two last-mentioned species, but has the basal part of the upper surface darker chestnut-brown, so that the median band is sharply defined proximally; the marginal spots of both wings are large and form on the hindwing a continuous band; the hindwing is not tailed at vein 3; the black submarginal band on both wings is considerably narrower than in *phraortes* and *andranodorius*. The ground-colour of the under surface is rust-brown and the white markings have a beautiful silver gloss; the black transverse markings in the basal part of the hindwing are much reduced and only represented by fine streaks; as in *andranodorius* cellules 7 and 8 each have only one black spot or transverse streak, and even this may sometimes be absent; the median band of the hindwing is posteriorly much narrowed and is unicolorous or only in cellules 2—4 with a black streak at its proximal side. Congo, Angola, Nyassaland, Zambesi, Transvaal, Natal.

*eudoxus*.

**Ch. eudoxus** differs from the preceding in having the median band on the upperside of the forewing completely bordered on both sides by the deep black-brown ground-colour and towards the costal margin much narrowed but almost straight. The basal third of both wings above is dark red-brown; the red-yellow marginal spots are large and on the hindwing united into a marginal band. On the under surface of the hindwing the silver-white median band is narrow with yellowish spots along the middle and in the basal area the black centres of the silvery streaks and spots are entirely or almost entirely absent. A very rare species. — **eudoxus** *Drury* has the median band on the upperside of the forewing rather broad and in cellules 4—7 also composed of rounded spots; on the under surface this band is lighter than the ground-colour and distinctly defined. Pupa unicolorous green, with yellowish spiracles and orange-yellow cremaster. Sierra Leone to Cameroons.

*mechowi*.

— In **mechowi** *Rothsch.* (30 c as *eudoxus*) the median band of the upper surface is placed very near to the distal margin and in cellules 2—6 is very narrowly linear; on the under surface, except at the hindmargin in cellules 1 a and 1 b, it is red-brown and not lighter than the ground-colour. Angola and the southern Congo region.

## 2. Zingha Group.

The single species of this group differs from all others in the shape of the hindwing. This is produced at the anal angle, between veins 1 b and 2, into a broad lobe, which is joined to a short, obtuse tail at vein 2. On this ground the species has been regarded by some authors as the type of a separate genus, *Monura* *Mab.*

*zingha*.

**Ch. zingha** *Stoll* (32 d). Both wings above deep black with a common red-yellow or red-brown transverse band; on the forewing this is triangular, extends from the hindmargin to vein 6, reaches the base at the hindmargin and encloses a rounded black spot in the basal part of cellules 2 and 3; on the hindwing it covers the basal area and extends distad to vein 3; the black distal area is ornamented with some red-yellow marginal spots and some white dots at the anal angle. Beneath the forewing is black-grey at the apex and the costal margin, but in the cell and behind vein 3 reddish, with 6 rounded black dots in the cell, a black spot in cellule 3, two in the basal part of cellule 2, a large black submarginal spot in cellule 1 b and a similar smaller spot in cellule 2. The hindwing beneath is broadly grey-yellow at the costal margin in cellules 7 and 8, with 5 or 6 rounded black spots, then very gaily coloured, the whitish or red-brown ground-colour being divided into spots by a network of numerous black transverse streaks and lines; the anal lobe is yellow at the distal margin. The ♀ is larger and lighter than the ♂, but otherwise differs but little. Sierra Leone to the Congo.

## 3. Etesipe Group.

The species of this group are easily distinguished by having the costal margin of the hindwing beneath light and entirely without markings. The distal margin of the hindwing forms a distinct break or notch at vein 5 and the hindwing has in both sexes two long thin tails (at veins 2 and 4). The females are quite unlike the males in the colour and markings of the upper surface. The transverse markings beneath are especially strongly developed in the cell and in cellules 2 and 3 of the forewing and 6 and 7 of the hindwing and are red-brown with or without black bordering.

*etesipe*.

**Ch. etesipe**. The transverse band on the upperside of the hindwing in the ♂ is blue and placed beyond the middle of the wing, in the ♀ it is at least partly white and placed about at the middle. — **etesipe** *Godt.* ♂ (30c). The transverse band of the forewing is narrow, entirely broken up into spots, only those in cellules 1 a, 1 b and 2 are blue, the others white, and placed near the distal margin; white spots are also present in the basal part of cellules 2—6 and at the apex of the cell; the median band on the upperside of the hindwing is only 2—3 mm. in breadth and is also broken up into spots. ♀. The transverse band on the upper surface is broad and white, the markings at the distal margin of the hindwing indistinct. Sierra



Leone to Angola and Unyoro. — **abyssinicus** *Rothsch.* differs from the type-form in having the blue transverse *abyssinicus*. band of the hindwing in the ♂ continuous and about 5 mm. in breadth; the blue spot in cellules 1a and 1b on the upperside of the forewing are also larger than in *etesipe*; the ♀ is unknown. Abyssinia. — **tavetensis** *tavetensis*. *Rothsch.* (30 d ♀). ♂. The blue transverse band on the upperside of the hindwing is posteriorly continuous and very broad (7—8 mm. in breadth in cellule 2), but anteriorly much narrowed and broken up into spots; the blue spots in cellules 1a and 1b of the forewing are larger than in *etesipe*, but smaller than in *abyssinicus*. The ♀ is very similar to that of typical *etesipe*, but somewhat smaller and with more distinct markings at the distal margin of the hindwing above. East Africa from Nyassaland to Taveta in British East Africa. — **cacuthis** *cacuthis*. **this** *Hew.* In the ♂ the blue transverse band is continuous and about 8 mm. in breadth, not narrowed anteriorly; the blue spots in cellules 1a and 1b on the forewing are about 6 mm. in breadth and joined together into a band. The ♀ is distinguished by having the broad median band of the upper surface white on the hindwing and to vein 2 or 3 of the forewing, thence orange-yellow to the costal margin of the forewing. Madagascar.

**Ch. penricei** *Rothsch.* ♂: the under surface is marked almost as in the preceding species; but above *penricei*. the transverse band, as in the ♀ of *etesipe*, is placed nearly in the middle of the hindwing and further from the distal margin than in *etesipe* ♂; it is white or bluish white and from vein 2 of the hindwing to vein 2 of the forewing broad and continuous, then broken up into small spots, two each in cellules 2, 3 and 6 and one each in cellules 4, 5, 7 and in the cell; the ground-colour of the upper surface is bluish black. The ♀ is unknown. This rare species has hitherto only been found in Angola. — **peculiaris** *Lathy* only differs from the type-form *peculiaris*. in having the black colour replaced by greenish. Rhodesia.

**Ch. achaemenes** *Fldr.* The wings in the ♂ above black, at the base black-grey with a common white *achaemenes*. transverse band, which is placed on the forewing about the middle, on the hindwing somewhat before the middle, hence in the latter not covering the base of cellule 3; the median band forms on the forewing single quadrate spots in cellules 1a—3 and 7 and two widely separated spots in each cellule from 4 to 6; on the hindwing it terminates at vein 2. The forewing has small rounded spots at the ends of the interneural folds and the hindwing whitish marginal streaks, more or less tinged with blue, in cellules 1c—5 and similar submarginal streaks in cellules 1c—7. The under surface is marked almost as in *etesipe*, but has a lighter ground-colour, finer transverse streaks and a rather sharply defined whitish median band. The ♀ differs in having the basal part of the upper surface yellow-brown and the median band light orange-yellow; the marginal spots on the upperside of the forewing are larger, streak-like and red-yellow, the marginal and submarginal spots of the hindwing are larger and the marginal spots distinct in cellules 6 and 7 also, but there red-yellow. Above the ♀ strongly recalls *Ch. saturnus* (30 b) and the ♀ of *Ch. guderiana*, but these species are quite differently marked beneath. German South-West Africa, Natal to Abyssinia and thence on the south side of the Sahara to Senegambia, but wanting in the West African subregion. ab. **fasciatus** *Suff.* only differs in the much larger *fasciatus*. submarginal spots on the upperside of the hindwing. Mhonda in German East Africa.

#### 4. Cynthia Group.

This small group differs from all the others in having the transverse markings in the cell of the forewing beneath ferruginous or red-brown. The upperside of the hindwing has a broad, continuous orange-yellow or red-yellow marginal band. In the first species the tails of the hindwing are short or even mere teeth, in the others of normal length.

**Ch. protoclea** *Feisth.* (33 d). The ♂ has the forewing above unicolorous black, only in cellules 1a—2 *protoclea*. with orange-yellow marginal spots or with orange-yellow marginal band; hindwing above also deep black but with very broad orange-yellow marginal band, 10 mm. in breadth at vein 3, usually enclosing a black dot in cellules 1c and 6; the under surface of both wings dark umber-brown with the markings ferruginous, only in cellule 1c of the forewing black; the costal margin of the forewing not lighter than the ground-colour. The ♀ is quite unlike the ♂ and has on both surfaces a very broad white median band, which in cellules 3—7 of the forewing is more or less completely broken up into spots; the ground-colour is above blackish, beneath lighter grey-brown than in the ♂; the forewing above as in the ♂ only with orange-yellow marginal spots in cellules 1a—2; the yellow marginal band on the upperside of the hindwing only 3 mm. in breadth. Senegambia to Angola. — **nothodes** *Jord.* connects the type-form with *azota*, the marginal spots of the forewing being *nothodes*. better developed than in the former, but less than in *azota*, and the submarginal spots not so complete as in *azota*. Tanganyika. — **azota** *Hew.* (33 d) must be regarded as the eastern race. The ♂ only differs in having *azota*. the orange-yellow marginal band on the upperside of the forewing extending to the apex and preceded by a transverse row of orange-yellow submarginal spots, which are or less confluent with the marginal ones. The ♀ has a still broader white median band on the upper surface, on the forewing broken up into two rows of spots in cellules 2—7, of which the distal row is formed of large orange-yellow spots; the orange-yellow marginal band on the forewing above is complete, as in the ♂. Distributed in East Africa from Delagoa Bay to Nyassaland and British East Africa. ♂-ab. **nyasana** *Btlr.* only differs in having the marginal and submarginal spots on *nyasana*. the upperside of the forewing connected as far as vein 5, enclosing a black spot; in the normal form these spots are already separated in cellule 4. Nyassaland.



The two following species differ very considerably from the preceding and are distinguished by having the underside of the forewing white or silvery at the costal margin to the end of the cell and also by the hindwing beneath having a nearly straight silvery median band, only 2—3 mm. in breadth. The transverse markings of the under surface are reddish, as in the other species of this group, and only black in cellule 1b of the forewing. The base of both wings above more or less broadly red-yellow or red-brown. The females with light yellow median band. The hindwing with two well developed tails.

- Ch. boueti** is distinguished by a material reduction of the black markings on the upper surface. In the ♂ the basal part of the forewing above is only separated by a row of free black spots from the broad, concolorous median band and the marginal spots also only by a nearly straight row of thick, lunulate, black spots from the median band. In cellules 3—7 of the forewing the median band is divided into two by black spots.
- boueti*. — In **boueti** *Feisth.* ♂ the spots which divide the median band in cellules 3—7 are united into a band; the transverse streaks in the basal part of cellule 2 on the underside of the forewing are black; the ♀ is unknown.
- lasti*. In Senegambia and the interior of Sierra Leone. — **lasti** *Smith* (♀ 31 a, as *boueti*). ♂: the black spots on the upperside of the forewing which divide the median band are free or nearly so; the hindwing above is almost unicolorous red-yellow, only before the distal margin with a row of black submarginal spots. The ♀ has a whitish yellow median band, which on the forewing is already divided into two branches from cellule 2, the proximal one composed of very irregular spots; the distal part of the forewing is black with small red-yellow marginal spots; the basal part of both wings yellow-brown; the hindwing with a broad black submarginal band before the red-yellow distal margin. Manicaland to Mombasa in British East Africa. — In **rectans** *Rothsch. & Jord.* (♂) the marginal spots of the forewing are larger and the marginal band of the hindwing narrower than in the type-form. Forewing beneath with a silvery transverse band beyond the middle. Abyssinia.
- cynthia*. **Ch. cynthia** *Btlr.* (31 a ♀). The ♂ is above confusingly like that of *lucretius* (30 d), the only particular difference being that the red-yellow marginal spots on the forewing are smaller and the red-yellow marginal band of the hindwing broader; beneath, however, it agrees almost completely with *boueti* and hence is very different from *lucretius*. The ♀ is on both surfaces similar to that of *boueti*, differing above in the darker black-brown basal part of both wings, in the brighter yellow median band, which is red-yellow in cellules 3—7 of the forewing, and the larger marginal spots. Sierra Leone to Angola and Unyoro.

### 5. Lucretius Group.

The cell of the forewing beneath with three undivided black, white-margined or entirely white transverse streaks. The wings above black with red-yellow markings, in the last species milk-white in the basal part, or in the ♀ blackish with common white median band and the base of the costal margin of the forewing red-brown.

- lucretius*. **Ch. lucretius** *Cr.* ♂ (30 d). Wings above black with slight bluish reflection; forewing rust-brown in the cell and at the costal margin, beyond the middle with a nearly straight row of 8 large red-yellow spots and with similar but smaller marginal spots; hindwing beyond the middle with red-yellow, posteriorly narrower discal band and with broad red-yellow marginal band; the under surface red-brown with black transverse streaks in the basal part. In the ♀ both wings above are smoke-brown with common whitish discal band, placed as in the ♂ but much narrower; the marginal spots of the forewing very small or indistinct; the marginal band of the hindwing much narrower than in the ♂ and whitish with orange-yellow tinge; the base of the costal margin of the forewing only very narrowly red-brown; the under surface lighter than in the ♂ and with whitish discal band, which is broader than above. In the West African forest-region from Sierra Leone to Angola and Uganda, widely distributed and very common.
- odysseus*. **Ch. odysseus** *Stgr.* (30 d). Of this rare species only the ♀ is known. It somewhat recalls the ♀ of *lucretius* but is smaller, has short, obtuse tails to the hindwing and instead of the light marginal band on the hindwing a row of 6 white submarginal spots in cellules 2—7. The wings are dark umber-brown above, somewhat lighter at the base of the forewing, and have beyond the middle a narrow whitish discal band, more or less broken up into spots, two being placed in cellule 5 and two in cellule 6 of the hindwing; in the basal part of cellules 3—6 on the forewing there are also small light spots; forewing at the distal margin with light spots in cellules 1b—3. One of the many species peculiar to the island of St. Thomé.
- lactetinctus*. **Ch. lactetinctus** *Karsch* (30 d). Both wings above broadly suffused with milk-white at the base; the forewing then black with orange distal band, cleft at the costal margin, but at the hindmargin indistinct in cellules 1a and 1b and with orange marginal spots; the distal half of the hindwing black with narrow orange marginal band, preceded by blue spots; thorax and abdomen above milk-white. Both wings beneath dark violet-brown; the cell of the forewing with two transverse streaks, the first and second black and white ringed, but the third entirely white. A rare species, only observed in the Togo hinterland and Adamaua.

### 6. Tiridates Group.

The forewing beneath in cellule 1b near the hinder angle with two large, more or less united, black spots, proximally bounded by a thick, yellow lunule. The cell of the forewing beneath with three black, white-margined transverse spots, the second of which is occasionally broken up into two spots of unequal size. The wings above black with blue markings and in the females with white transverse band on the forewing; the ground-colour in the ♀ sometimes olive-grey. The veins are brown and the hindwing beneath has transverse markings at the costal margin in cellule 8. The hindwing in both sexes with two tails, which, however, are sometimes very short, hardly more than teeth.



**Ch. bohemanni** *Fldr.* (33 a). Both wings above in the basal part glossy blue; on the forewing the blue *bohemanni* colour reaches to the base of vein 3 and is distally out off straight but obliquely, on the hindwing it extends far beyond the middle; before the apex of the forewing two white subapical spots; the apical area is otherwise unicolorous black in the ♂, but has in the ♀ a broad white transverse band, placed close beyond the blue colour and extending from the costal margin to vein 1. On the hindwing the costal and distal margins are broadly black, the latter with a fine blue marginal line, partly whitish in the ♀, and blue submarginal dots; the inner margin grey to vein 2. The under surface is grey to brown-grey with black, white-edged transverse streaks, which on the hindwing do not form a continuous line. German South-West Africa to the Congo and eastwards to Massailand.

**Ch. smaragdalis** *Btlr.* Both wings above from the base to the apex of the cell black with greenish or *smaragdalis* bluish reflection, then follows in the ♂ a blue half-band, about 10 mm. in breadth, between the hindmargin and vein 2 or 3 and in each cellule from 3—7 two very widely separated spots, all blue except the distal ones in cellules 6 and 7; in the ♀ there is in the middle a white transverse band, 7 mm. in breadth, running obliquely from the costal margin towards the hinder angle and reaching vein 1; the outer row of spots, which runs almost parallel with the distal margin in the ♂, is almost identical in the ♀. The hindwing has behind the apex of the cell a blue transverse band 12 (♂)—15 (♀) mm. in breadth and is black at the distal margin with blue-white submarginal spots and marginal line. The under surface is dark grey-brown, marked almost as in *bohemanni*. Niger to Angola and Uganda. — **butleri** *Rothsch.* (31 a; by mistake as *smaragdalis*). *butleri*. The blue transverse band on the upperside of the hindwing is narrower and everywhere completely separated from the blue marginal line. Sierra Leone to the Gold Coast.

**Ch. monteiri** *Stgr.* (33 a). The ♂ is very similar above to that of *smaragdalis*, only differing in having *monteiri* the distal blue spots in cellules 2—7 of the forewing much larger and sagittate and the transverse band on the hindwing anteriorly narrower and posteriorly completely united with the marginal line. Forewing beneath light grey-blue at the base and before the distal margin. In the ♀ the forewing is black-brown above, with broad white transverse band and two white subapical spots; the hindwing above umber-brown, towards the distal margin somewhat lighter and with 8 large, angled, blue-centred, black submarginal spots and a black marginal line, thickened between the veins. Only occurring on the island of St. Thomé.

**Ch. pythodoris**. Distal margin of the hindwing uniformly rounded without tail-appendages, but shortly dentate at the extremities of the veins. Abdomen white above. Both wings above black (only the forewing at the base of the costal margin brownish) with broad blue and white transverse band, which on the hindwing almost reaches the base, but is distally irregularly dentate and only extends a little beyond the apex of the cell. The transverse band of the forewing is similar to that of *smaragdalis* ♂, but begins at the middle of the hindmargin, forms large spots in 1a and 1b and is then broken up into two spots each in cellules 2—7, the distal ones blue and the proximal nearly white; the proximal spot in cellule 4 is placed much nearer to the base than the rest; forewing without marginal spots; hindwing with a row of small white or bluish submarginal dots, but its marginal spots indistinct or absent. Under surface almost uniform yellow-brown with fine black transverse streaks. — **pythodoris** *Hew.* has the black marginal band on the upperside of the hindwing narrower, *pythodoris* about 10 mm. in breadth at vein 6; the blue transverse band of the forewing always undivided in cellules 1a and 1b. Angola and the southern part of the Congo region. — In **nesaea** *Smith* the black marginal band on *nesaea* the upperside of the hindwing is broader, about 14 mm. in breadth at vein 6; the blue spot in cellule 1b of the forewing usually more or less divided into two spots. German and British East Africa. — Both forms are very rare.

**Ch. nandina** *Rothsch.* ♂: forewing above black, behind the middle of the hindmargin with an oblong *nandina* blue spot in 1a, 2—4 blue spots in 1b and then with 2 irregularly curved transverse rows of white or bluish white spots, the proximal row composed of four spots in cellules 2—5 and the distal of six in cellules 2—7; small yellowish marginal spots. Hindwing above between veins 2 and 7 with a posteriorly pointed, sharply defined blue median band, in the middle about 5 mm. in breadth, accompanied by a whitish spot in cellule 7; behind the middle runs an S-shaped curved row of 6 small blue spots and near the distal margin a curved row of 6 or 7 bluish dots; the marginal lunules themselves are yellowish; the tails well developed, about 5 mm. in length. The under surface agrees almost exactly with that of *cithaeron*. The ♀ closely resembles that of *xiphares*, but differs in having a transverse row of 8 white spots behind the middle of the forewing above and in the smaller, ochre-yellow median spot of the hindwing. British East Africa in the Kikuyu district; rare.

**Ch. xiphares** *Cr.* (31 c). ♂: the forewing marked almost exactly as in *nandina*, but the spots blue with the *xiphares* exception of the first two in the distal row; the basal part is tinged with blue, but usually not so distinctly as in the figure. The blue median band of the hindwing is placed further distad, is broader and distally deeply incised at the veins or even almost broken up into spots; small blue submarginal dots and blue or yellowish marginal spots. The ♀ is very different from the ♂; the forewing is brown-black without blue markings, but with four white discal spots (in the middle of cellule 2, before the middle of 3 and at the base of 4 and 5)



and 2 or more white spots behind the middle; small yellowish marginal spots in cellules 1b and 2. The hindwing above in the middle between veins 2 and 7 with a very broad (about 15 mm.) ochre-yellow transverse band, distally irrorated with dark, which covers the basal half of cellules 2—6; streak-like blue submarginal spots and narrow yellowish marginal streaks. On the under surface the light spots of the forewing are larger and the hindwing has in the middle an irregular white band, proximally bordered with yellowish; the ♀ is much larger than the ♂. Cape Colony, Kaffirland, Natal and Transvaal. — Larva green with two whitish, red-centred and black-margined dorsal spots, the larger on segment 6 and the smaller on segment 8.

*cithaeron*. **Ch. cithaeron** Fldr. (31 b). ♂: forewing above black with two transverse rows of blue spots; the proximal row in the middle, composed of 6 spots (2 in cellule 1b and one each in 2—5), the distal consists of 8 spots, of which the first, in 6 and 7, are white; an elongate blue spot in 1a beyond the middle. Hindwing above beyond the middle with a broad transverse band, posteriorly whitish and anteriorly blue, blue submarginal spots and whitish marginal streaks. The basal part of the under surface with irregularly arranged, black, white-edged transverse streaks. The ♀ has on the upperside a broad, curved white transverse band, proximally sharply defined, on the forewing and a bluish white transverse band on the hindwing and is hence very similar above to the ♀ of *violetta* (31 a). East Africa from Natal to Kenia in British East Africa.

*violetta*. **Ch. violetta** Smith (31 a). Both sexes above almost exactly like the corresponding sexes of *cithaeron*, but differing in the presence of a fine, nearly straight transverse line in the middle of the hindwing beneath, distally margined with white, in the ♂ narrowly, in the ♀ for a breadth of 2—3 mm. Delagoa Bay to Nyassaland and Mombasa. — Larva green, sprinkled with minute yellowish dots; horns on the head bluish or violet; the dorsal spots grey or rust-coloured.

*numenes*. **Ch. numenes** Hew. (31 c). Tails of the hindwing short. Hindwing beneath somewhat beyond the middle with a continuous, fine, gently curved, black transverse line, distally bordered with white, almost exactly as in *violetta*. In this these two species differ from all the rest of the *tiridates* group. ♂: wings above bluish black, at the base black-brown; forewing in the middle with four small blue spots in the basal part of cellules 2—5 and usually also behind the middle with a transverse row of blue dots; marginal spots distinct, ochre-yellow. Hindwing beyond the middle with a row of blue dots, incurved in cellule 6; small whitish submarginal spots and fine whitish marginal streaks. The ♀ agrees almost entirely with that of *tiridates* above (cf. 31 b). Sierra Leone to Angola and Uganda. — **neumanni** Rothsch. has larger yellow marginal spots on both wings and somewhat longer tail-appendages on the hindwing; Abyssinia.

*tiridates*. **Ch. tiridates** Cr. (31 b). Tails of the hindwing normally developed. The median line on the underside of the hindwing neither continuous nor straight, but very deeply sinuate and broken up into transverse streaks in cellules 1c—8. The ♂ has the upperside of the wings coloured and marked exactly as the ♂ of *numenes*; marginal streaks of the hindwing yellow or whitish. ♀: the basal half of the forewing and the hindwing to far beyond the middle olivaceous brown-grey; distal half of the forewing black with white, nearly straight median band, 2 or 3 whitish subapical spots and small yellowish marginal spots: the black marginal band of the hindwing is about 7 mm. in breadth and has blue, white-dotted submarginal spots and yellowish marginal streaks. — Larva green with a large brown spot on the back of the sixth segment. Pupa green with light nebulous spots. A common species, distributed from Sierra Leone to Angola and Uganda. — In **marginatus** Rothsch. & Jord., from Abyssinia, the marginal spots on the upperside of both wings are larger and form a marginal band only interrupted by the veins.

*mixtus*. **Ch. mixtus** Rothsch. The ♂ is very similar to that of *tiridates* and only differs in having the marginal spots of the forewing short and whitish and the marginal streaks of the hindwing thick, undivided, blue; the blue spots behind the middle of the hindwing are also much larger than in *tiridates*. The ♀ is considerably larger than the ♂, but similar in colour and markings, hence entirely different from *tiridates* ♀. Cameroons and Congo.

*bipunctatus*. **Ch. bipunctatus** Rothsch. is another close ally of *tiridates*, distinguished chiefly by the very short, tooth-like tails of the hindwing. Both sexes above coloured and marked like those of *tiridates*; the blue spots, however, in the ♂ in part indistinct or absent and the marginal streaks of the hindwing thick, ochre-yellow and not interrupted. Ashanti to Aruwimi.

*imperialis*. **Ch. imperialis** Btlr. ♂: forewing above with a straight blue transverse band, which starts somewhat behind the middle of the hindmargin, runs obliquely towards the apex, gradually narrowing anteriorly and broken up into spots; the band is 5 mm. in breadth at the hindmargin and only continuous to vein 2, then broken up into spots; the spots in cellules 3—5 contain white dots and those in cellules 6 and 7 are white, the one in cellule 7 placed nearer to the base than that in 6; the forewing is black and has in addition to these spots a white dot at the apex of the cell in cellule 4, a white dot before the middle of cellules 5 and 6 and small blue marginal spots. On the hindwing the blue band is continued to vein 2 with a breadth of about 7 mm. and placed almost exactly in the middle, covering the apex of the cell; blue submarginal spots and marginal streaks; tails short, about 3 mm. in length. On the under surface of the hindwing the black, distally light-margined transverse streaks of cellules 2—7 are placed in a nearly straight line. In the ♀ the blue median band between



vein 2 on the hindwing and vein 2 on the forewing is formed just as in the ♂, then follow in each cellule from 2—7 on the forewing two rounded, light yellow spots, the proximal one in cellule 4 placed at the apex of the cell; the marginal spots of both wings and the submarginal spots of the hindwing are yellowish. A rare species occurring from Sierra Leone to the Congo.

**Ch. ameliae** Doumet (31 b). ♂: forewing above black with the following blue markings: a broad longitudinal streak in the cell, an angular spot at the apex of the cell, a spot behind the middle of the costal margin, 8 rather large submarginal spots and small marginal spots. On the hindwing an anteriorly narrowed median band, rounded submarginal spots and fine marginal streaks are blue. On the under surface the black transverse streaks in cellules 2, 4—7 are placed in an almost straight line and are distally accompanied by a whitish band. The ♀ is much larger and has the ground-colour above black-brown and all the markings white or yellowish white. The cell of the forewing is unmarked; the median band of the hindwing reaches the inner margin, is basally widened and is continuous on the forewing as far as vein 2; the proximal spots of cellules 2—7, which in the ♂ are almost all wanting, are here large and distinct, but the distal ones scarcely larger than in the ♂; on the underside of the hindwing the light median band is broader and more distinct. The tail at vein 2 is short in both sexes, much shorter than the one at vein 4. This magnificent species occurs everywhere in the West African forest-region and is distributed to Aruwimi and to Nyassaland.

### 7. Hadrianus Group.

This group is only represented by a single species of characteristic appearance. Hindwing above and both wings beneath with white ground-colour. The black transverse streaks in the basal part of the under surface are very fine and in part indistinct or entirely suppressed: in cellule 1b of the forewing near the hinder angle a large, deep black spot. The tails of the hindwing are obtuse, the one at vein 2 about 2 mm., that at vein 4 nearly 5 mm. in length. Sexes alike in colour and markings.

**Ch. hadrianus** Ward (31 d). Forewing at the base red-brown nearly to vein 3, then black with a white median band, at the hindmargin about 15 mm. in breadth, but rapidly narrowing anteriorly and terminating at vein 5, with two small white discal spots in cellules 5 and 6, white submarginal spots in 2—6 and a white marginal spot in 1b. Hindwing above narrowly red-brown at the base, with black submarginal and marginal streaks at the distal margin. Beneath the hindwing has in the middle a thick black transverse line, distally accompanied by a deeply dentate red-brown transverse band; this transverse band shows through above. A beautiful but rare species, occurring from the Niger to the Congo.

### 8. Nobilis Group.

This small group differs from all the other African species of *Charaxes* in having the cell of the hindwing beneath black with (silver-) white transverse spots. The hindwing with two tails of equal length, in the ♀ bent away from one another. Abdomen above in the ♂ white or whitish at least towards the tip, in the ♀ black. The forewing beneath near the hinder angle in cellule 1b with a large orange-yellow, black-margined spot: a similar but smaller spot placed in cellule 2. The hindwing beneath with white or whitish ground-colour to far beyond the middle, before the middle with 5 or 6 thick, deep black transverse lines, some of which are more or less joined together, forming only two bands at the costal margin.

**Ch. nobilis** Druce (32 c). ♂: wings above black with a common cream-coloured median band, on the hindwing very broad (about 20 mm.), on the forewing gradually narrowed and terminating in cellule 3 in a free spot; the forewing in addition with a light yellow spot in cellules 5 and 7; the black marginal band of the hindwing about 9 mm. in breadth, with blue submarginal spots and marginal streaks and an orange-yellow anal spot; hindwing beneath with three thick, curved, black transverse lines beyond the middle, enclosing three rows of white spots, the middle one composed of large, the others of streak-like spots; at the anal angle a large orange-yellow spot enclosing two black eye-spots with bluish pupils. The ♀ differs in having the median band on the upper surface much broader (on the hindwing 23—25 mm., on the forewing in cellule 2 19—20 mm.) and almost white, and bears in addition an elongate white spot in cellule 6 on the forewing above. Old Calabar, Cameroons, Congo; everywhere rare.

**Ch. superbus** Arn. Schultze is very similar to the preceding species, but differs in having the forewing narrower with the distal margin little excised, in the larger, dull sulphur-yellow marginal spots of the forewing, in the blue-grey band, up to 4 mm. in breadth, which in cellules 2—6 separates the median band of the hindwing from the black marginal band, in the larger and more complete white transverse spots in the cell of the forewing beneath, in the black, white-spotted marginal band on the underside of the hindwing, which is only half as broad as in *nobilis* (about 5 mm.) and is proximally bounded by an orange-yellow band 5 mm. in breadth in cellule 2, and in the white markings in the apical half of the forewing beneath. In *superbus* the median band on the underside of the forewing covers the base of cellule 3 and then follows a white band, about 5 mm. in breadth, in cellules 3—6, a broad transverse spot, formed as in *nobilis*, in cellules 5—7 and finally before the distal margin in cellules 1b—7 seven crescentic spots of uniform breadth, of which those in cellules 1b and 2 are orange and the rest silvery white. Cameroons. SCHULTZE observed this beautiful species drinking in a native latrine.



9. *Etheocles* Group.

In this group the under surface of the forewing has in the cell 3 small, rounded, black dots and a curved or straight transverse streak, which are arranged as in the figure of *ochracea* (33b). The hindwing has always two distinct tails. The forewing beneath has in cellule 1b near the hinder angle two black, more or less connected or free spots. The species otherwise nearly agree with those of the *tiridates* group. The ♀♀ are often quite unlike the ♂♂ and in *etheocles* a large number of entirely different female forms occur.

## First Subgroup.

The fine black transverse streaks in the basal part of cellules 2, 4—8 on the underside of the hindwing are joined together, forming a straight or nearly straight transverse line; cellule 3 without transverse streak. Hindwing above with broad, light (red-yellow, blue or white) transverse band or with broad orange-red marginal band.

*anticlea*. **Ch. anticlea** *Drury* (33 d). ♂: wings above deep black; forewing at the hinder angle between the hindmargin and vein 3 with a triangular orange submarginal band, which is only 1 mm. from the distal margin; hindwing above with an orange band, anteriorly narrower, in the middle about 8 mm. in breadth, which encloses 4—6 black, white-centred submarginal spots; above strongly recalls the ♂ of *protoclea* (33 b). In the ♀ the wings are black-brown above, with a common, nearly straight, light orange median band, which on the hindwing is 9 mm. in breadth and in cellules 5—7 of the forewing is divided into two branches: hindwing with a continuous orange marginal line only about 2 mm. in breadth. Sierra Leone and Ashanti. — **adusta** *Rothsch.* only differs in the ♂ in having the orange submarginal band of the forewing 2 mm. from the distal margin and in the ♀ in the orange marginal line of the hindwing being partly broken up into spots. Cameroons to Angola and Uganda.

*opinatus*. **Ch. opinatus** *Heron*. ♂ almost exactly like that of *etheocles* (33 b) in shape and size. Wings above black-brown; forewing unicolorous without markings; hindwing with the tails and a continuous marginal line orange-red and before the distal margin with grey-blue, white-centred submarginal dots; about 6 mm. from the distal margin is placed between veins 1b and 7 a transverse row of small, red-yellow, separated transverse streaks. The under surface strongly recalls that of *anticlea*, both wings having before the middle a darker, almost straight-edged transverse band about 5 mm. in breadth, which is curved round basewards in cellule 1c of the hindwing and more or less completely covers cellules 1a—1c. ♀ unknown. Ruwenzori.

*baumanni*. **Ch. baumanni** *Rghfr.* (33 c). ♂: hindwing above beyond the middle between veins 2 and 7 with a light blue transverse band, in the middle about 5 mm. in breadth, anteriorly narrowed, which is also continued on the forewing but is there much narrower and broken up into small spots; forewing otherwise unmarked, but the hindwing with white-centred submarginal spots and greenish (in cellules 4—6 orange-yellow) marginal streaks. The fine black median line of the under surface is also continuous on the forewing to the costal margin, straight and on both wings distally bordered with whitish. In the ♀ the transverse band on the upper surface is pure white, somewhat further from the distal margin and continuous to vein 4 of the forewing, then divided into two rows of spots. Manicaland, Nyassaland and German East Africa.

*thysi*. **Ch. thysi** *Capronn.* (33 c). ♂ above black with intensive blue reflection; both wings beyond the middle with a common dark blue transverse band, on the hindwing 6 mm. in breadth, on the forewing somewhat narrower and broken up into spots; hindwing with white submarginal dots and bluish marginal streaks. This remarkably beautiful but very rare species differs from all other African forms in its bright silvery under surface, which is divided beyond the middle by a red-brown, black-spotted transverse band 2—3 mm. in breadth. The ♀ is unknown. Congo.

*hildebrandti*. **Ch. hildebrandti** *Dew.* (33 c). ♂: wings above black with a common, straight, white, bluish-bordered transverse band, extending from vein 2 on the hindwing to vein 7 or 8 on the forewing, but in cellules 5—8 of the forewing broken up into small, rounded spots; tails of the hindwing short and obtuse. The white transverse band occurs beneath also and is here basally bounded on the hindwing by the fine, continuous and nearly straight black discal line, but on the forewing in cellules 1b—3 proximally often angled at the veins so as to form a series of steps. Hindwing beneath with yellowish marginal line. The ♀ is somewhat larger than the ♂ and has the white transverse band broader and scarcely margined with blue, reaching the inner margin of the hindwing; otherwise it agrees with the ♂. Gold Coast to Angola.

*blanda*. **Ch. blanda** *Rothsch.* In the ♂ the wings are black above, with strong greenish blue reflection. Hindwing above beyond the middle between veins 2 and 7 with a broad (9 mm. in cellule 2), blue transverse band, gradually narrowing anteriorly, in cellule 8 represented by a small, free blue spot; on the forewing the transverse band is continued to the costal margin as a row of small blue spots; these spots are placed about 7 mm. from the distal margin and in cellules 4—6 have white centres; in addition the forewing has small, rounded blue spots in the basal part of cellules 2—6, the one in cellule 4 as usual placed at the apex of the cell. Hindwing above in cellules 2—6 (7) with bluish submarginal and marginal streaks, in cellule 1c with two white-centred submarginal spots and a thick orange-yellow marginal streak. On the under surface this



species is transitional towards the second subgroup, the black discal streaks in cellules 2, 4—8 forming an almost continuous but not quite straight line, which forms the distal side of the dark transverse band; on the forewing the transverse streaks in cellules 1b—4 are not joined together. ♀ unknown. German East Africa: Mikindani.

### Second Subgroup.

The fine black transverse streaks in the basal part of cellules 2—8 on the underside of the hindwing do not quite touch one another and are not placed in a straight line. Hindwing in the ♂ above entirely without light transverse band or behind the middle with a row of blue spots only 1—2 mm. in breadth, and only in the first species with broad blue transverse band.

**Ch. kheili** *Stgr.* (33 c). ♂: wings above with black ground-colour; forewing with large blue marginal spots, a row of 8 or 9 blue, or in cellules 6 and 7 white postdiscal spots at 5 mm. from the distal margin, 2—4 discal spots in 3—6, and usually also a blue spot in the cell. Hindwing behind the middle in cellules 2—5 with a somewhat irregular band of 4—5 spots; submarginal and marginal spots small and blue. Under surface as in *ethalion*. ♀ unknown. Congo and Niam-niam-land. — **northcotti** *Rothsch.* ♂: wings above black; hindwing behind the apex of the cell between veins 2 and 6 with a blue transverse band 8 mm. in breadth, which at veins 2—5 is united with the thick blue marginal lunules and hence encloses black, white-pupilled submarginal spots; forewing above with large blue marginal spots, only separated by the black veins, and 3 mm. from the distal margin with a row of 8 blue (or at the costal margin white) submarginal spots, of which the last two (in 1a and 1b) are more or less united to the marginal spots; in the basal part of cellules 2—6 and in the apex of the cell there are also blue spots. Under surface coloured and marked as in *ethalion*. ♀ unknown. Ashanti.

**Ch. guderiana** *Dew.* (33 b). ♂: wings above black; forewing at the base greenish blue with a large white spot at the end of the cell, two white discal spots in 5 and 6, a complete row of 8 white, or towards the hindmargin bluish postdiscal spots and large white marginal spots; hindwing in cellules 2—5 with a blue postdiscal band, which is only separated by a fine black line from the bluish, white-dotted submarginal streaks; marginal streaks thick, white, in cellules 1c—3 usually bluish and dotted with yellowish. Under surface as in the other species, but with two white spots at the costal margin of the forewing. The ♀ is quite different above, strongly recalling *Ch. saturnus* (30b) and the ♀ of *Ch. achaemenes*; it was even described in 1892 as a variety of *Ch. pelias*. Wings above at the base light brown to vein 3 and then with common light orange-yellow median band, extending from vein 2 of the hindwing to vein 4 of the forewing; the forewing has in addition the following orange-yellow markings: a spot at the apex of the cell, two discal spots in 5 and 6, a postdiscal row of 6 rounded spots in 2—7 and large marginal spots united into a band; the ground-colour of the apical part is black. On the hindwing the median band is followed distally by a deep black band 10 mm. in breadth and then the blue, white-centred submarginal spots and the marginal spots, which in cellules 4—7 are thick and bright orange-yellow, but in 1c—3 narrow, greenish and indistinctly dotted with yellow. The under surface is much lighter than in the ♂, the median band being also present here; hindwing with red postdiscal lunules. Angola to British East Africa, but not in South Africa.

The following forms of this subgroup have been long the subject of differences of opinion and on account of their extreme variability, especially in the female, have given occasion for the erection of numerous species which have no foundation in nature. ROTHSCHILD and JORDAN, however, by careful examination of very extensive material, have shown in their excellent monograph of the genus *Charaxes* that we are dealing here with at most two really different species. It only remains now to confirm this by breeding the forms from the egg. I would urgently recommend this highly interesting task to all our readers who are resident in Africa.

**Ch. etheocles** (33 b). Both sexes are very variable and it has not yet been possible to prove that certain male forms belong to certain female. I must therefore treat the two sexes independently.

♂ (33b): ground-colour of both wings black above. Forewing with the distal margin more or less emarginate; with or without blue markings; the blue markings which may be present are: a spot in the cell; 1—4 discal spots in the basal part of cellules (3, 4) 5 and 6; one or more postdiscal and marginal spots. Hindwing usually with a row of postdiscal lunules and always with white submarginal dots (often ringed with greenish) and distinct marginal streaks. The under surface is similarly marked in all the forms, but is very variable as regards the ground-colour. — f. **picta** *Rothsch.* Forewing above with large marginal spots and with 3—8 postdiscal spots, sometimes also with discal spots in cellules 3 and 4. Hindwing often with distinct postdiscal spots, but only 1 mm. in breadth; the marginal streaks in cellules 4—6 thick and dotted with red. East Africa from Quilimane to Unyoro. — f. **fulgurata** *Auriv.* Forewing above with large marginal spots and 3—7 strongly curved submarginal spots, the extremities of which reach the marginal spots; in addition with 2 or 3 discal spots and a spot in the cell. Hindwing with fine postdiscal lunules and thick marginal streaks, in cellules 4—6 dotted with red. Under surface light reddish brown. Angola. — f. **chanleri** *Holl.* (= *phaeacus* *Stgr.*). Forewing above with large marginal spots, but with only 2 postdiscal spots. Under surface whitish grey to grey. Angola;



*contraria*. Transvaal to Somali and Unyoro. — f. **contraria** Weym. Forewing above with large white marginal spots, 2 postdiscal dots in 6 and 7, discal dots in the same cellules and a spot in the cell. Hindwing above with a fine, undulate blue postdiscal line, white submarginal dots and thick white marginal streaks, more or less bordered with bluish. Under surface with (silvery) white ground-colour and very conspicuous black markings. German East Africa. — f. **cytila** Rothsch. Forewing above with small or indistinct marginal spots and two postdiscal spots. Under surface unicolorous red-brown or chocolate-colour. Angola, Nyassaland. — f. **catochrous** Stgr. Forewing above with very small or indistinct marginal spots and at most with three blue spots at the costal margin (a postdiscal, a discal and one in the cell); marginal streaks of the hindwing not dotted with red. Ground-colour of the first two-thirds of the under surface whitish, contrasting sharply with the marginal part. Niger to Congo and Uganda. — f. **hollandi** Btlr. Marginal spots on the upperside of the forewing small or absent and at most one postdiscal spot; under surface with alternate darker and lighter bands, the ground-colour brown. *carteri*. Common in West Africa from Sierra Leone to the Congo and Uganda. — f. **carteri** Btlr. only differs from the preceding in the red-violet tone of the under surface, especially on its darker parts. West Africa from Sierra Leone to Congo. — f. **ephyra** Godt. Forewing with small but distinct marginal spots and one postdiscal spot; marginal spots of the hindwing without red streaks. Under surface coloured either as in *hollandi* or as in *carteri*. *lutacea*. West Africa. — f. **lutacea** Rothsch. Forewing above at the base greenish with a large spot in the cell; discal and postdiscal spots single or absent; marginal spots indistinct or absent; the marginal streaks of the hindwing in cellules 4—6 ochre-yellow or reddish. Under surface dark. Congo and Unyoro. — f. **violacea** Rothsch. Upper surface with violet-blue ground-colour; forewing with or without marginal spots; marginal streaks of the hindwing dark-centred. Under surface as in *hollandi* or *carteri*. Ashanti to Congo. — All these forms intergrade more or less and hence cannot be sharply differentiated. — The ♀♀ are much more variable even than the ♂♂ and some of them are so dissimilar above that they look like quite different species. The cell of the forewing above has a light spot at the apex or is entirely light. It is noteworthy that many forms are very like other species of *Charaxes* and exactly mimic these. In order to simplify the analysis of the numerous forms I divide them into three groups:

1. Females in which the forewing above has two almost vertical rows of light spots towards the hind-margin (cf. *ochracea* 33 b).

*kirki*. f. **kirki** Btlr. Hindwing above with broad white median band, with the proximal border bluish and the distal somewhat yellowish, marginal streaks olive, in cellules 4—6 orange. The two rows of spots on the forewing are joined together in cellules 1a—3 and only in cellules 4—7 more or less completely separated; the band formed by them is yellowish white to ochre-yellow. German and British East Africa. — f. **ochracea** Rothsch. (33b). The discal and postdiscal spots of the forewing ochreous and in cellules 1a—3 or only in 1a joined together; the hindwing above with broad pale yellow median band and ochreous marginal streaks (only the streak in 1a greenish). Under surface red-brown or grey-brown in the basal part, yellow-brown or yellowish in the marginal. Gaboon and Congo. — f. **daria** Rothsch. & Jord. The transverse band on the upperside of the wings is in shape similar to that of *ethalion* ♀, but is entirely white and in the posterior part of the forewing narrowly, on the hindwing broadly margined with blue. Abyssinia. — f. **etheocles** Cr. Discal and postdiscal spots of the forewing white or whitish, connected in cellules 1a—3 or all widely separated; in the latter case the postdiscal spots are all small. Hindwing above with broad white median band, bluish at the edges, and with yellowish or whitish marginal streaks. Sierra Leone to Gaboon. Resembles the ♀ of *Ch. ameliae*. — f. **regalis** Rothsch. The spots in 1a and 1b of the forewing united and blue, the rest free, rounded and yellow or whitish. Hindwing above with blue median band and yellow marginal streaks. Recalls the ♀ of *Ch. imperialis*. Sierra Leone to Old Calabar. — f. **dewitzi** Btlr. Forewing above in 1a and 1b with large blue spots, about 10 mm. in breadth, in 2—6 with bluish discal spots, in 2—5 entirely without postdiscal spots and only in 6 and 7 with whitish ones. Hindwing above with very broad blue median band (about 12—14 mm.) and greenish, in cellules 4—6 reddish marginal streaks. Angola. — f. **seriata** Rothsch. Upper surface with red-violet reflection. Forewing in cellules 1a and 1b quite unicolorous or only with yellowish postdiscal spots; cellules 2—7 with small, widely separated, yellow discal and postdiscal spots. Hindwing above without median band, but with orange-yellow marginal streaks and sometimes with indistinct violet postdiscal line. Gaboon. — f. **alladinis** Btlr. Upper surface with bluish reflection. Otherwise only differs from *seriata* in having the spots of the hindwing blue, violet or whitish and the marginal streaks on the hindwing grey-blue or greenish. Gold Coast to Cameroons. — f. **fulgens** Rothsch. only differs from *alladinis* in having two blue-violet discal spots in cellules 6 and 7 on the upperside of the hindwing. Sierra Leone. — f. **virilis** Rothsch. Upper surface bluish black. Forewing only with a single blue discal spot in cellule 6 and with an indistinct blue spot in the cell. Hindwing as in *seriata*. In the absence of the spots on the upper surface this female form strongly resembles a ♂. — It need scarcely be pointed out that the forms here mentioned may intergrade without any sharp demarcation.



2. Females in which the forewing above has a curved white transverse band running from the costal margin towards the anal angle or the hindmargin.

f. **cedreatis** Hew. (33 c). Forewing above at the base to the white transverse band and hindwing to 5 mm. *cedreatis*. from the distal margin olive-grey; the white transverse band of the forewing in cellules 2—6 5 mm. in breadth and sharply defined, in 1a indistinct; apical part black with 2 whitish postdiscal spots in 6 and 7. Hindwing with whitish submarginal and greenish marginal streaks. Above coloured and marked as in the ♀♀ of *tiridates* and *numenes*. Gold Coast to Angola. — f. **rosae** Btlr. Hindwing also with a broad whitish or light blue median *rosae*. band above; basal part of both wings brown with metallic reflections. Hindwing beneath with or without white median band. Delagoa Bay to Taveta. — f. **lunigera** Rothschild. Hindwing above light blue to 5 or 6 mm. *lunigera*. from the distal margin; basal part of the forewing brown; forewing above in cellules 3—7 with strongly curved bluish white submarginal spots. Angola. — f. **manica** Trim. (33 b). Hindwing as in *lunigera*; forewing above *manica*. bright blue to the transverse band. Angola, Manicaland, Nyassaland. Recalls the ♀ of *Ch. bohemani*. — f. **vetula** Rothschild. The white transverse band of the forewing terminates at vein 2; the blue colour of the upper *vetula*. surface less decided, at the base somewhat indistinct; otherwise agreeing with *manica*. Ogowe River.

3. Females in which the forewing above is bright blue at least to vein 3 and the hindwing to far beyond the middle. Forewing without white transverse band.

f. **phaeus** Hew. Forewing above with postdiscal spots only in cellules 3—7. Delagoa Bay to German *phaeus*. East Africa. — f. **coryndoni** Rothschild. The postdiscal spots of the forewing are all present, those in 1a and 1b *coryndoni*. joined to the blue basal area; forewing with small blue marginal spots; marginal streaks of the hindwing thick and greenish. Under surface with reddish grey ground-colour and weakly marked. Zambesi. —

All the above forms are regarded by ROTHSCHILD and JORDAN as one geographical race. — On the other hand **viola** Btlr., which is distributed from Senegambia to the Cameroons hinterland, may be regarded *viola*. as a separate race. ♂: small, expanse only 48—50 mm. Forewing above black with a blue spot in the cell, a white discal spot in cellule 6, two very small, indistinct postdiscal dots in 6 and 7 and thick blue-grey marginal streaks, almost united into a band. Hindwing above in cellules 2—4 with fine undulate blue postdiscal line just before the white-dotted submarginal spots and with blue marginal streaks, in cellules 5—7 whitish and dotted with red-yellow. ♀: wings above black-brown; forewing with a light yellow transverse band 4—5 mm. from the distal margin, in cellules 1a—3 usually confluent and 5—8 mm. in breadth, but in cellules 4—7 divided into two branches, of which the outer is uniformly curved. Hindwing above with a broad white, posteriorly bluish transverse band, white submarginal and thick marginal streaks, the latter greenish in cellules 1c—3 and orange-yellow in 4—6.

**Ch. ethalion** Bdv. Very nearly allied to the preceding species and only differing in the male in the *ethalion*. genital armature and in the female in having the cell of the forewing above unicolorous, never with light spots. ♂: wings above velvety black, almost without metallic gloss. Forewing above without marginal spots and at most with a postdiscal and a discal spot; spot in the cell often absent. Hindwing with small or indistinct whitish submarginal dots and greenish, in cellules 4—6 often red-yellow marginal streaks. The ♀ is similar to that of *etheocles* f. *etheocles*, but has no spot in the cell of the forewing. The markings are white, ochre-yellow or bluish. Cape to British East Africa. — Larva unicolorous green with a yellowish-bordered spot on the sixth segment. — ♂-ab. **kitungulensis** Strand has two postdiscal spots in 6 and 7, but no other light spots on the *kitungulensis*. forewing. German East Africa: Kitungulu.

#### 10. *Acraeoides* Group.

The only species belonging to this group differs from all other *Charaxes* in its *Acraea*-like markings.

**Ch. acraeoides** Druce. Head black with four yellow spots, two at each side above the eye; antenna *acraeoides*. and body above black, a white spot on the thorax behind the collar and a yellow one at each side of the thorax; palpus above black, beneath yellow; breast and underside of the abdomen orange-yellow; legs black; forewing above black with a subapical band of 4 yellowish white spots; hindmargin with red streak and before it 5 large red spots, the one near the hinder angle the largest. Hindwing above red, at the base and the inner margin black; hinder angle and a part of the inner margin yellowish white; a rather broad black marginal band, which encloses no white submarginal dots; a black transverse streak at the end of the cell. Forewing beneath in the apical part light yellow-brown with black veins and interneural folds; the light subapical band as above, but proximally bordered by a row of black spots which is continued to the hinder angle; the cell and the middle of the wing greenish grey; the cell with the usual black transverse markings; the wing behind the cell orange-red. Hindwing beneath orange-red, lightest before the cell and at the anal angle; distal margin



and veins black; 4 large black spots at the costal margin, 4 in the cell and 5 in a curved row behind the cell; the black marginal band with blue and greenish grey dots. Recalls *Pseudacraea clarki*. Cameroons.

### 11. *Jahlusa* Group.

Differs from all the preceding groups in the light, green or yellowish, veins. Both wings above with narrow, light-spotted, black marginal band; forewing in addition with black spots in the cell and the basal part of cellules 1 b—8: these spots are rounded and on the under surface margined with white. Hindwing above almost unmarked, beneath with large silver spots; at the anal angle obtusely produced and with two small tails, of which the one at vein 2 is somewhat longer. Colour and markings decidedly *Argynnis*-like. Distal margin of the forewing in the ♂ deeply, in the ♀ more weakly excised.

*jahlusa*. **Ch. *jahlusa* Trim.** (31 d). Wings above light orange-yellow with black marginal band, 3 (♂) or 4 (♀) mm. in breadth, which on the forewing only encloses large marginal spots, on the hindwing both submarginal spots and also marginal streaks. Forewing above in addition with a dot and a curved transverse streak in the cell, a transverse streak at the end of the cell, two discal dots each in 1 a and 2, a spot each in 3—7 and a longitudinal streak in 4—7 just inside the marginal band black. Hindwing above without markings or with small black transverse streaks in 2 and 4—7. Forewing beneath in the cell and in cellules 1 a—2 light reddish, at the costal margin and in the apical area olive-grey with a large silver-white spot behind the middle of the costal margin; the black spots almost as above. Hindwing beneath at the base and at the distal margin dark olive-coloured, in the middle with continuous silver-white transverse band, in the basal part of cellule 7 with a large silver spot, the cell and cellule 1 c each with two smaller ones; two black dots in cellule 1 a and 3 in 8; the interneural folds of cellules 1 b—6 inside the marginal band with black longitudinal streaks. Abdomen beneath with a black longitudinal line at each side; these streaks anteriorly thickened and often joined together. Cape to Transvaal. — **argynnides Westw.** is the more northern form, occurring at the Zambesi, in Nyassaland and German East Africa. The black lines on the underside of the abdomen are broken up into spots, the transverse streak in the cell of the forewing is also divided into spots and the silver-white markings on the under surface are smaller.

### 12. *Candiope* Group.

The veins green or greenish, especially on the under surface. Forewing above with greenish yellow, light yellow or red-brown basal half and blackish apical half, in which is placed a curved, S-shaped transverse row of 6 or 7 brown-yellow or orange-yellow spots. Hindwing above with a triangular black marginal band, which is broadest at the costal margin and becomes gradually narrower posteriorly. Hindwing with long tails at the ends of veins 2 and 4. Sexes similar.

**Ch. *candiope*.** The marginal band of the hindwing reaches at least to vein 3 and is ornamented with light submarginal spots. Hindwing beneath without postdiscal eye-spots and without tail at the end of vein 3. Basal half of the forewing above light yellow or red-yellow, the yellow colour always changes into a red-brown at the proximal side of the dark apical half. — ***candiope* Godt.** (32 a). Basal half of the forewing above light yellow; apical half blackish with large orange-yellow submarginal and marginal spots; marginal area on the upperside of the hindwing black with large, sharply prominent submarginal spots and thick marginal spots united into a band. Sierra Leone to Abyssinia and Natal. Larva thick, green sprinkled with yellowish dots and with yellow lateral line; head margined with yellow; sixth and eighth segments above each with three yellow, orange-dotted spots. — ***velox* Grant** is somewhat smaller and otherwise only differs in having the basal part of both wings uniform yellow-brown and the marginal streaks of the hindwing narrower and darker. Island of Socotra. Larva green with a reddish ring on the dorsum of the sixth segment. — ***thomasius* Stgr.** The basal half of the forewing light yellow as in the type-form; the apical half of the forewing and the marginal band of the hindwing, which is about 14 mm. broad in cellule 6, however, are dark chestnut-brown with small and indistinct submarginal and marginal spots. Island of St. Thomé.

**Ch. *antamboulou* Luc.** (32 a) is very similar to the preceding species, but has smaller submarginal and marginal spots on the upper surface and the ground-colour of the basal part of the forewing above is light yellow to the black apical half. Madagascar.

**Ch. *cowani* Btlr.** Basal half of both wings dark uniform red-brown; black marginal part sharply defined, with moderately large spots; hindwing with a tail 3—4 mm. in length at vein 3. Madagascar.

**Ch. *analava* Ward** (31 e). The marginal band of the hindwing is unicolorous black without spots and only reaches vein 4. The hindwing beneath behind the middle with a row of large eye-spots, of which the one in cellule 7 is especially large and distinct. Hindwing with 3 long tails, that at vein 3 somewhat shorter. Ground-colour of both wings light yellow. Madagascar.

### 13. *Varanes* Group.

With this group begin the species in which the forewing beneath has no black spot or spots in cellule 1 b at the hinder angle; a slight indication of such spots, however, sometimes occurs in the present group. Veins at the base light and more or less greenish. Veins 3 and 4 of the hindwing not stalked. Hindwing with a long tail at the end of vein 4, but between vein 4 and the anal angle cut off nearly straight, without appendage or only with short tail at vein 2. Hindwing beneath beyond the middle with a transverse row of large eye-spots, almost angularly bent in cellule 4. Costal-marginal area (cellule 12) on the underside of the forewing normally scaled. Both wings above with lighter, unspotted basal area and the apical part red-brown to black-brown with transverse rows of orange-yellow spots.



**Ch. varanes.** Distal margin of the forewing emarginate. Both wings above milk-white at the base. Hindwing with obtuse angle at the extremity of vein 2. — **varanes** Cr. (= *austrinus* Rothsch.). The white colour in the basal part of the forewing above forms only a small spot at the hindmargin and does not reach, or scarcely reaches, the base of vein 2. Larva bluish green with numerous white punctiform spots and white lateral line; sixth, eighth (and tenth) segment with white dorsal spot. Cape Colony, Natal, Transvaal. — **vo- logeses** Mab. (32 d, erroneously called *varanes*) only differs in the greater extent of the white colour on the forewing and intergrades into the type-form without any sharp dividing line. The whole of West and East Africa.

**Ch. fulvescens.** Distal margin of the forewing in the first three races nearly straight. Forewing above in the basal part light yellow. Hindwing not angled at vein 2. Upper surface of both wings darker in the marginal part than in *varanes*. — **fulvescens** Auriv. (32 d). Both wings beneath light straw-yellow at the base. Sierra Leone to Gaboon. — **monitor** Rothsch. Wings beneath yellow-grey or olive-coloured at the base. Congo to Uganda and German East Africa. — **comoranus** Auriv. Basal area of both wings above uniform light orange-yellow without white; the inner spots in the black distal part of the forewing above much produced transversely; the dark marginal band on the upperside of the hindwing much narrower than in the other races. Comoros: Mayotte. — **acuminatus** Thurai. Forewing with the distal margin deeply excised and long, sharp, falcate apex; the orange or red-brown spots in the black marginal area small or indistinct. German East Africa.

**Ch. balfouri** Btlr. Hindwing at vein 2 with a tail 3 mm. in length and at the ends of all the veins distinctly dentate; forewing with the distal margin weakly excised or nearly straight and undulate. Both wings above chestnut-brown, only a little darker in the marginal area; forewing with transverse rows of orange-yellow spots almost exactly as in *varanes*, but somewhat nearer together. Hindwing above without dark marginal band, but with thick, black submarginal lunules, proximally bordered with orange-yellow, and white marginal streaks. On the under surface the dark brown-grey basal part is extended to beyond the middle and distally bounded by a white line or band. Only found on the island of Socotra; does not fly so rapidly as other species and when disturbed soon settles again.

#### 14. Lichas Group.

Hindwing between the anal angle and vein 4 nearly straight, at vein 2 feebly angled but not tailed, at vein 4 with a short tail, only about 3 mm. in length. Wings above red-brown; apex and distal margin of the forewing more or less broadly black. Wings beneath with a common dark transverse line, extending from the costal margin of the forewing, just before the apex, to the anal angle of the hindwing. Costal margin of the forewing beneath in cellule 12 white or whitish to the end of the cell.

**Ch. lichas.** Forewing with the distal margin almost straight and the hindmargin somewhat excised before the posterior angle. The transverse line on the underside of the forewing straight. Wings beneath only at the proximal side of the transverse line silky grey, otherwise ochre-yellow with brown transverse lines or transverse streaks. The ♀ has the ground-colour of the upper surface much lighter yellow and instead of the black marginal part only transverse rows of black streaks. — **lichas** Dbl. ♂. The black colour of the apical area of the forewing extends to the apex of the cell and is either spotted at the inner margin or quite unicolorous = ab. **othello** Suff. (31 d; erroneously called *lichas*). Sierra Leone to the Congo. — **bebra** Rothsch. ♂. The black colour at the apex of the forewing does not nearly reach the cell and is deeply incised or spotted with the ground-colour, especially in cellules 4 and 5. Cameroons, Congo region, German East Africa.

**Ch. paphianus** Ward (32 a). Forewing with the distal margin incised and the apex acute; hindmargin straight. The transverse line on the underside of the forewing curved. Under surface brown, with grey silky gloss almost throughout. Wings above reddish brown-yellow; costal and distal margins of the forewing black for a breadth of 2—4 mm.; some black discal spots. Hindwing above only with ring-shaped, often indistinct black submarginal spots. Sierra Leone to Angola and Aruwimi.

#### 15. Zoolina Group.

The species of this group differ from all others in the hindwing having in the ♂ only one long tail, at vein 2, but in the ♀ two, at veins 2 and 4. The two species which it comprises are further distinguished by occurring in two quite different forms, one with black markings on a greenish white ground-colour and the other with red-brown markings and the ground-colour red-yellow to whitish. These forms are bred together from the eggs of the same ♀ and seem to be independent of the seasons.

**Ch. kahldeni.** Hindwing beneath in cellule 1e with a black longitudinal stripe, extending from the base nearly to the anal angle and posteriorly joined to the median stripe, which is also black. — **kahldeni** Homeyer & Dew. (= *W-brunnea* Baker). Both wings greenish white; distal and costal margins of the hindwing narrowly black; from the costal margin arises a black submarginal line, which beneath reaches to vein 1, but above at furthest to vein 2. Hindwing above only with a fine marginal line and three submarginal spots (in cellules 1c—3) black, beneath, in addition to the two stripes already mentioned, with a thick black submarginal line and a fine marginal line. Cameroons to Angola. In f. **homeyeri** Dew. (31 d) the basal half of the forewing above is whitish, the apical part yellow-brown with rust-brown marginal band spotted with yellow;



hindwing above whitish with a rust-brown marginal band about 3 mm. in breadth. Under surface brownish, sprinkled with darker dots, as in the type-form with longitudinal stripe in 1c and a median band, but with dark dots instead of the submarginal stripes. Cameroons to Angola; rare.

**Ch. zoolina** occurs in three local races, each with a greenish and a brown or brown-yellow form. The greenish white forms differ from *kahldenii* in the broad dark marginal band on the upperside of the hindwing and the yellow-brown forms from *homeyeri* in the absence of the longitudinal stripe in cellule 1c on the hindwing beneath. — **zoolina** *Westw.* (32 b): wings with the ground-colour greenish white; forewing above with the costal margin, a transverse spot at the end of the cell and the apical area black, the latter more or less spotted with white; hindwing with a black marginal band, 4—5 mm. in breadth, with small white dots. Wings beneath almost as above, but with larger white spots in the marginal bands, common black median band and black longitudinal stripe in cellule 1c of the hindwing; distal margin of the hindwing scarcely appreciably angled at vein 4. The ♀ is larger and has the light spots in the marginal bands much larger and joined together; *neanthes*. hindwing above with yellowish marginal streaks. Natal to Uganda and Abyssinia. f. **neanthes** *Hew.* (32 b). The ground-colour is lighter or darker ochre-yellow and the black markings of the type-form are replaced by ferruginous or dark brown; occasionally they are black, ab. **obscuratus** *Suff.* Under surface irrorated *obscuratus*. with dark, without the longitudinal stripe in cellule 1c of the hindwing. — **ehmckeii** *Dew.* Distal margin of the hindwing distinctly angled at vein 4. Otherwise only differs from *neanthes* in having both wings above *ehmckeii*. broadly whitish at the base and beneath without distinct median band. Angola. f. **phanera** *Jord.* has in the ♂ a distinct angle at vein 4 of the hindwing and less extended black markings on the forewing, but *phanera*. otherwise agrees with *zoolina*. Angola. — **betsimisaraka** *Luc.* occurs on Madagascar and only differs from *zoolina* in the hindwing of the ♂ having a distinct though small tooth at the end of vein 4 and in the transverse streak at the end of the cell of the forewing only reaching the base of vein 3. f. **betanimena** *Luc.* corresponds to f. *neanthes*, but is darker and with the marginal band darker rust-brown and more continuous. The hindwing in the ♂ distinctly toothed at vein 4. Wings beneath without median band, or with this sharply *betanimena*. pronounced and margined with white, ab. **andriba** *Ward.* Madagascar.

#### 16. Eupale Group.

The only species of this group is easily known by the light green ground-colour of both wings. The hindwing without tail, but with a short angle at the extremity of vein 4.

**Ch. eupale** *Drury* (32 c). Both wings light green; apical half of the forewing much darker green, sharply defined proximally, at the hindmargin at least 2 mm. in breadth. Hindwing above with rounded black spots before the distal margin and thick dark green or brown terminal line. Sierra Leone to Angola. — **dilutus** *Rothsch.* is somewhat larger, with the apical half of the forewing light green, less sharply defined proximally and terminating at or before the end of vein 1. Hindwing without dark marginal line and with the submarginal spots smaller or indistinct. In the interior of the Congo region and in Nyassaland.

#### 17. Nichetes Group.

Distal margin of the forewing emarginate, before the anal angle at the end of vein 2 strongly convex. Hindwing in the ♂ produced to a point at the anal angle; distal margin curved and feebly dentate but without tail; in the ♀ rounded at the anal angle and with a very short tail at vein 4. Ground-colour above orange-red with violet reflection.

**Ch. nichetes** *Smith* (32 b). ♂: wings above with a nearly straight black median band, extending from the costal margin of the forewing to the middle of vein 2 on the hindwing and about 4 mm. in breadth. Forewing with black discal spots in cellules 2—6, which are more or less completely united with the proximal side of the transverse band; hindwing inside the band broadly blackish. Forewing with dark marginal spots united into a band and hindwing with thick submarginal annulated spots. In the ♀ the basal half of both wings above is almost as dark as the transverse band, which is consequently only bordered distally by the reddish yellow ground-colour; submarginal spots of the hindwing united into a light-spotted band 4 mm. in breadth. Cameroons to Angola. — **leoninus** *Btlr.* (32 b), as the figure shows, differs from the type-form only in having the black markings much less developed. In the ♀ they are even more reduced, the ground-colour much lighter orange-yellow and the distal margin of the hindwing uniformly rounded, without tails. Nyassaland.

#### 18. Laodice Group.

Wings above deep black with blue markings. Hindwing in the ♂ with the distal margin undulate or dentate, without tail, in the ♀ tailed at vein 4. The under surface of both wings dark, weakly marked.

##### First Subgroup.

Cell of the forewing unicolorous black without spots. Hindwing usually with white submarginal dots above and beneath.

**Ch. porthos** *Smith*. Hindwing above with a blue transverse band 4—5 mm. in breadth, placed in the *porthos*. middle and continued on the forewing almost straight to vein 6 or 7, but then becoming gradually narrower and breaking up into spots. ♀ unknown. Cameroons to the Congo; very rare.

**Ch. zelica** *Btlr.* (32 b). Hindwing above with a narrow blue transverse band, broken up into spots, *zelica*. placed far beyond the middle and only 7 mm. from the distal margin. Forewing above with a transverse row of small blue spots, almost vertical to the costal margin and forming almost a right angle with the band of the hindwing. ♀ unknown. A rare species, only certainly known from the Cameroons and Angola.

**Ch. laodice** *Drury* (32 c). ♂: hindwing above with blue marginal streaks in cellules 1c—5 (—6), but *laodice*. without submarginal dots or only with very small ones; close inside the marginal streak and only 3 mm. from the distal margin is placed a row of 6 thick blue spots. Forewing above with blue submarginal spots in 1a—4 and with two blue spots at the costal margin in 5 and 6, about 5 mm. beyond the apex of the cell. Wings beneath with grey silky gloss, hindwing with a blackish transverse band beyond the middle. ♀: both wings above with broad, dark ochre-yellow marginal band; hindwing with white submarginal dots, but without marginal streak. Gold Coast to Angola.

### Second Subgroup.

Cell of the forewing above wholly or for the most part blue. Hindwing without submarginal dots. Hindwing above beyond the apex of the cell with a straight blue median band, anteriorly narrower; this is continued on the forewing by a row of large blue submarginal spots running parallel with the distal margin. Forewing in addition with two blue spots at the middle of the costal margin in cellules 5 and 6. The ♀ with a tail 5 mm. in length at vein 4 on the hindwing.

**Ch. mycerina** *Godt.* Forewing above without blue marginal spots. Hindwing above with almost continuous blue marginal streaks. Sierra Leone to the Congo.

**Ch. doubledayi** *Auriv.* (32 c). Forewing above with large blue marginal spots; hindwing above with *doubledayi*. thick marginal lunules. Sierra Leone to the Congo; commoner than the preceding species.

### 3. Genus: **Palla** *Hbn.*

Agrees with *Charaxes* in neurulation and other morphological characters; but the middle and hindtibiae are without spines above, veins 3 and 4 of the hindwing are long-stalked and the closing vein of the cell on the hindwing very fine. In the scheme of markings, however, the species of *Palla* differ entirely from all the *Charaxes*. The under surface of both wings is divided by a white median band into a dark basal area, almost without markings, and a marginal area densely covered with brown transverse striation; cellules 1a and 1b on the hindwing also striated. Hindwing without marginal streak, but its underside just before the distal margin with black, white-pupilled eye-spots, ringed with red-brown. In addition to the black proximal bordering of the white median band there are in the dark basal part of the under surface black transverse streaks only in the cell of the forewing (4) and one each in cellule 1b of the forewing and 7 and 8 of the hindwing.

Forewing in the ♂♂ of all species unicolorous black-brown above, with a white median band starting from the middle of the hindmargin and reaching the costal margin somewhat before the middle. Hindwing with a long tail at vein 4 and above with a very large orange-yellow median area, which extends at the hindmargin from the anal angle to vein 4 or 5 and becoming gradually narrower anteriorly reaches at least to the middle of vein 3 or even to vein 6 or 7 and anteriorly joins the continuation of the white transverse band of the forewing. When the orange-yellow area is long the white band of the hindwing becomes short, and vice versa. The early stages are unfortunately not known.

**P. publius** *Stgr.* The white transverse band on the underside of the forewing is sharply bounded distally *publius*. by a black-brown band. The orange colour on the upperside of the hindwing reaches at least to vein 6. ♀ similar to the ♂. Sierra Leone to the Congo.

**P. ussheri** *Btlr.* (32 d). The white transverse band on the underside of the forewing distally not sharply *ussheri*. defined, but only bounded by the dark striation. ♂: upper surface marked as in *publius*. ♀: wings above with common light yellow to yellowish white median band; forewing with contiguous orange-yellow submarginal spots and hindwing with similar marginal spots. Sierra Leone to the Congo and Uganda.

**P. decius** *Cr.* ♂ (32 d). The white median band of the upper surface reaches vein 5 or 4 on the hind- *decius*. wing and is more or less broadly bordered with bluish. ♀ similar to that of *ussheri*, but with lighter, almost white, bluish-bordered median band 7—11 mm. in breadth on the forewing and the submarginal spots completely separated. Sierra Leone to Angola.

**P. violinitens** *Crowley* is very similar to the preceding species and only differs in the ♂ in the white or *violinitens*. blue band of the hindwing covering also the base of cellules 2 and 3 and in the ♀ in having the white median band 12—15 mm. in breadth in the middle. Gold Coast to Angola.



2. Subfamily: **Nymphalinae**.

To the *Nymphalinae* belong no less than 17 Ethiopian genera, which are all confined to this region, having no representatives in any other. They are almost all characteristic of the primeval forest region and only occur singly elsewhere. Only a single species, *Hamatumida daedalus* F., is found also in quite dry, open country and even occurs in Arabia. On Madagascar there are only three species, two of which belong to *Pseudacraea* and one to *Aterica*. In South and East Africa the Nymphalines are comparatively rare and are almost exclusively confined to wooded localities.

The numerous forms often differ widely and have in common only the characters which are given in the synopsis of the subfamilies. The antenna is usually long to very long with the club elongate, irregularly rounded. The wings in the majority of the genera are large and broad, only in the last three (*Catuna*, *Pseudoneptis* and *Pseudacraea*) the forewing is narrower and elongate. The ground-colour is often dark brown to blackish, but very frequently with beautiful blue, green or violet reflections.

The sexes are often very unlike, the ♀♀ differing from the ♂♂ in colour and markings as well as in the shape of the wings. This renders the study of the forms considerably more difficult, but on the other hand makes this subfamily one of the most interesting among the butterflies.

The earlier stages of only a few species are known. The larvae appear to be distinguished by having only two rows of spines developed, one at each side of the dorsum; these spines are often strongly branched and much prolonged, sometimes erect, sometimes directed outwards and decumbent. Pupa with a large, pyramidal elevation on the dorsum.

Some of the genera are very nearly allied and sometimes they can only be certainly distinguished by comparing both sexes. The most important differences are brought out in the following synopsis.

**Synopsis of the Genera.**

I. The space between the stalk of veins 7—9 and vein 12 on the forewing is so narrow that veins 10, 11 and 12 touch one another or are only separated by very narrow spaces.

A. Vein 10 of the forewing arises from the cell or very rarely close behind the end of the cell from the stalk of 7—9.

a. The precostal vein of the hindwing arises from vein 8 at or a little before the point where this separates from the cell, very rarely somewhat behind this point. The cell of the hindwing in the latter case is always closed.

\* Cell of the hindwing open, very rarely (in *Cymothoë lucasi*, *cloetensi* and *oemilius*) finely closed.

1. Cell of the forewing closed. Vein 9 of the forewing arises in the ♂ about midway between the apex of the cell and vein 8, but in the ♀ somewhat nearer to vein 8. The precostal vein of the hindwing arises a little before the point of separation of vein 8.

1. *Cymothoë*.

2. Cell of the forewing open. Vein 9 of the forewing arises in the ♂ much nearer to the cell than to vein 8, in the ♀ nearer to vein 8 than to the cell. The precostal vein of the hindwing arises just opposite the point of separation of vein 8.

a. Vein 10 of the forewing from the cell. Hindwing in the ♂ produced at the anal angle.

2. *Euptera*.

b. Vein 10 of the forewing from the stalk of 7—9 shortly beyond the apex of the cell. Hindwing rounded at the anal angle.

3. *Pseudathyma*.

\*\* Cell of both wings closed.

† Vein 9 of the forewing in the ♂ usually arises shortly beyond the apex of the cell and always nearer to this than to vein 8.

§ Vein 9 of the forewing in the ♀ arises nearer to vein 8 than to the cell. Veins 3 and 4 of the forewing arise from the same point, the posterior angle of the cell, or at least nearer to one another than veins 5 and 6. The precostal vein of the hindwing arises at or somewhat after the point where vein 8 separates from the cell.

† Hindwing with broad, obtuse lobate tail at the anal angle midway between veins 1 b and 2. Wings above with green ground-colour. 5. *Eurypaetra*.

†† Hindwing rounded at the anal angle or projecting at vein 1 b or 2.

1. Sexes very dissimilar in colour, markings and wing-contour.

- a. Distal margin of the hindwing projecting at vein 1 b as far as (♀) or much further than at vein 2. 4. *Euryphura*.
- b. Distal margin of the hindwing, especially in the ♂, projecting most at the extremity of vein 2, more than at vein 1 b. 8. *Diestogyna*.
- 2. Sexes alike in colour and markings and with almost the same wing-contour. Vein 10 of the forewing always from the cell.
  - a. Vein 6 of the forewing separated from the stalk of veins 7—9 by a short, oblique upper discocellular. 6. *Harmilla*.
  - b. Vein 6 of the forewing arises from the same point as the stalk of veins 7—9, the upper discocellular being entirely absent. 7. *Crenidomimas*.

§§ Vein 9 of the forewing in the ♀ also arises nearer to the apex of the cell than to vein 8. Veins 3 and 4 of the forewing further separated at their origin than veins 5 and 6. The precostal vein of the hindwing always arises a little before the point where vein 8 separates from the cell. Vein 10 of the forewing always from the cell.

- 1. Palpus with grey hairs. 9. *Euryphene*.
- 2. Palpus with orange-yellow hairs. 10. *Euphaedra*.

†† Vein 9 of the forewing in both sexes arises from the stalk of 7 and 8, much nearer to vein 8 than to the apex of the cell. Veins 3 and 4 of the forewing at least as far apart at their origin as veins 5 and 6. The precostal vein of the hindwing arises at or somewhat before the point at which vein 8 separates from the cell. Vein 10 of the forewing always from the cell. 11. *Hamannumida*.

- b. The precostal vein of the hindwing arises from vein 8 after this separates from the anterior margin of the cell. Cell of the hindwing open. 12. *Aterica*.

B. Vein 10 of the forewing arises from the stalk of 7—9 far beyond the apex of the cell.

- a. The precostal vein of the hindwing arises from vein 8 at or a little before the point where this separates from the cell. Sexes quite different. 13. *Cynandra*.

- b. The precostal vein of the hindwing arises from vein 8 after this separates from the cell. Cell of the hindwing open. Veins 3 and 4 of the forewing rather widely separated. Sexes similar.

- 1. Forewing short and broad with the distal margin nearly straight. Vein 11 of the forewing free. 14. *Pseudargynnus*.

- 2. Forewing elongate with the distal margin curved and the apex broadly rounded. Vein 11 of the hindwing united with vein 12 for some distance. 15. *Catuna*.

II. The space between the stalk of veins 7—9 (—10) on the forewing and veins (10—) 11—12 is wide or very wide. Cells closed.

- a. Vein 10 of the forewing arises beyond the apex of the cell from the stalk of 7—9. Veins 3 and 4 of the forewing rather widely separated. 16. *Pseudoneptis*.

- b. Vein 10 of the forewing arises before the apex of the cell. Veins 3 and 4 of the forewing from a point or very near together. 17. *Pseudacraea*.

### 1. Genus: *Cymothoë* Hbn.

Large to medium-sized butterflies, the sexes usually quite different in colour and markings. The ♂♂ are as a rule lighter above and more unicolorous than the ♀♀, which are often dark but ornamented with light markings. The latter are, moreover, sometimes polymorphic. On account of these great differences in the sexes the identity of ♂ and ♀ of some species has not yet been certainly proved. Many questions with regard to the *Cymothoë* species can only be solved by exact observations in nature and by breeding from the larvae.

The larva has on segments 2—11 on each side of the dorsum a strong, erect, but little branched spine and on each side below the spiracles a very minute spine. The head is unarmed.

Pupa moderately rounded, without spines or warts, but with two short points on the head. The distal margin of the wing-cases stands out very sharply and a sharp longitudinal keel runs along the dorsal side from the anterior margin of the mesothorax to the end of the eighth segment. By this keel and their much more slender build the pupae of *Cymothoë* are distinguished from those of *Charaxes*.

The *Cymothoë* species occur only in wooded country, are rare in South and East Africa and only absent on Madagascar, the Mascarenes and the Comoros. They form several natural groups, which, however, cannot always be sharply distinguished in both sexes. The following synopsis of the groups may facilitate the determination of the numerous species.



## Synopsis of the Groups

- I. Distal margin of the hindwing distinctly angled — almost right-angled — at vein 4. 1. *Theobene* Group.
- II. Distal margin of the hindwing rounded or uniformly undulate.
  - A. Wings above black with common white median band, margined with bluish. 2. *Oemilius* Group.
  - B. Wings never marked as in A.
    - a. ♂: wings above never red or uniform dull golden yellowish.
      - † ♀: forewing above with numerous sharply defined white spots or with sharply defined white or whitish median band, which begins at the middle of the costal margin, runs obliquely towards the distal margin and posteriorly reaches at most to vein 2. Cell of the forewing above black with irregular white or bluish spots. ♂: distal margin of the forewing straight or nearly straight; wings above with the ground-colour cream-yellow, more or less orange-yellow towards the distal margin. 3. *Hyarbita* Group.
      - †† ♀: forewing above never both with white spots in the cell and white transverse band running obliquely towards the distal margin. ♂: distal margin of the forewing incised or the wings above coloured otherwise than in the *Hyarbita* group.
        - § ♂. Forewing above almost unicolorous bright dark orange-yellow or hindwing above with a continuous light, dark-bordered median band, which reaches vein 1 b and is but little widened anteriorly. ♀: hindwing above with narrow white median band, sharply defined and straight-edged at both sides. 4. *Lucasi* Group.
        - §§ ♂. Forewing above never unicolorous dark orange-yellow and hindwing above never with light median band. ♀: hindwing above without white median band or with this distally incised, not straight.
          0. ♂. Hindwing at the anal angle at the end of vein 1 b distinctly lobed or produced into a short tail. Forewing with the distal margin nearly straight and the apex rectangular. The ♀♀ (as far as they are certainly known) with the hindwing above from the base to far beyond the middle black or blackish, without light markings; distal margin only slightly undulate. 5. *Lurida* Group.
          00. ♂. Hindwing not produced at the anal angle. ♀. Hindwing either with the distal margin strongly undulate or the upper surface not unicolorous black to far beyond the middle.
            - y. Larger species; wing-expanse in the ♂ 70—75, in the ♀ 85—90 mm. Distal margin of the hindwing strongly undulate. Hindwing above unicolorous black or blackish at least to beyond the middle. 6. *Fumana* Group.
            - yy. Smaller species; expanse in the ♂ 50—62, in the ♀ 65—80 mm. Distal margin of the hindwing not or only weakly undulate. Hindwing above never unicolorous black to far beyond the middle. 7. *Caenis* Group.
      - b. ♂: wings above with the ground-colour red to dull golden yellow. ♀: wings above with red patches or with broad common white transverse band. 8. *Sangaris* Group.

1. *Theobene* Group.

This group embraces only a single species, which differs from all others in the shape of the hindwing. This is distinctly angled at the extremity of vein 4. The wings have an undulate distal margin, that of the forewing nearly straight in the ♂, weakly emarginate beyond the apex in the ♀. Hindmargin of the forewing not quite straight, but before the middle slightly convex and behind the middle, particularly in the ♀, emarginate, so that the hinder angle projects distinctly.

*theobene*.

**C. theobene** *Dbl. & Hew.* (34 d). ♂. Wings above in the basal area black-brown to vein 3, or on the forewing yellow-brown, then with light yellow median band, which is broadest at the costal margin of the forewing and terminates in a point at vein 1 b on the hindwing; the distal area has the ground-colour orange, but is more or less darkened at the distal margin and at the proximal part and encloses yellow submarginal spots and a black submarginal lunulate line. The under surface is yellowish, irrorated with small brown dots; it is divided into two halves by a fine, sometimes indistinct median line; the lunulate line is distinct. In the ♀ (34 d) the ground-colour on both surfaces is white; on the upper the black-brown basal area is sharply but irregularly defined distally and usually encloses two light spots at the apex of the cell on the forewing; the distal area is more or less irrorated with brown and encloses an irregularly curved transverse row of blackish spots and the black lunulate line, which is often thickened at the interneural folds. The under surface is more or less densely striated with brown and has a distinct black-brown median line. Pupa green without spots, but with orange-yellow dorsal keel and the sides of the cremaster yellow. Ivory Coast to Angola and Uganda. — **blasi** *Weym.* is the south-easterly form and only differs in the lighter colouring and in having the median band on the upper surface indistinctly defined distally. Portuguese South-East Africa, German East Africa. ab. **nebethéo** *Suff.* differs in having the dark median line on the under surface distally accompanied by a similarly coloured transverse band 5—9 mm. in breadth. Mhonda in German East Africa.



## 2. Oemilius Group.

Wings above black with a common, straight white transverse band, broadly margined with bluish at both sides, starting from the costal margin of the forewing beyond the middle and terminating at vein 1 b of the hindwing near the inner margin.

**C. oemilius** Doumet (34 a). Both wings above in addition to the median band with two rows of *oemilius*. rounded white spots dusted with blue, running parallel with one another and with the distal margin; the median band of the forewing produced distad along the veins. Costal margin of the forewing in the ♂ white as far as the cell. The under surface is light green with white median band and rows of whitish spots, between which the ground-colour is ornamented with small black submarginal dots; cell of the hindwing with two fine black rings, that of the forewing with two dentate transverse lines. Old Calabar to Gaboon.

**C. frederica** Dist. Of this apparently very rare species only the ♀ is known. It differs from that of *frederica*. the preceding species in the entire absence of the light spots in the distal part. Instead of these the spots of the broad median band show tongue-shaped prolongations almost to the distal margin in the middle of each cellule. The under surface is marked as above, but coloured as in *oemilius*. Old Calabar.

## 3. Hyarbita Group.

The species of this beautiful and rare group are nearly allied and are especially distinguished by having the ♂♂ entirely different from the ♀♀. The hindwing in both sexes is uniformly rounded and not produced at the anal angle. The distal margin of the forewing in the ♂ is straight and almost entire, in the ♀ only weakly excised and somewhat undulate. — ♂: both wings above more or less broadly darkened at the base and the hindwing at the inner margin, then light yellow, before the distal margin orange-yellow for a greater or less extent and at the distal margin narrowly darkened. Beneath the wings are light yellow with dark brown markings and red-brown median line. The ♀♀ on the contrary all have a black ground-colour above, white and blue spots in the cell of the forewing, a white transverse band on the forewing starting from the middle of the costal margin and running obliquely towards the distal margin and a broad white or light yellowish median band on the hindwing. The black submarginal line is absent or indistinct.

**C. reinholdi** Plötz is the largest and most beautiful of the species. ♂: base of both wings above blue- *reinholdi*. grey; on the forewing the blue-grey colour reaches vein 2, on the hindwing the apex of the cell, covering more than half of cellule 2 and also the base of cellule 3; cellules 1 a and 1 b on the other band are blackish; beyond the middle both wings have an orange marginal band about 9 mm. in breadth, which proximally shades into the light yellow ground-colour without any distinct boundary; the blackish submarginal line is not thickened at the folds and is separated throughout from the narrow black distal margin. Beneath the wings are light brown-yellow, divided by a quite straight red-brown median band, which is black in cellules 1 b and 2 of the forewing; the basal part is uniformly coloured, only with distinct black transverse markings in the cells, at their apices, in cellule 1 b of the forewing and in cellule 7 of the hindwing; in the distal part the postdiscal spots and the submarginal line are only weakly indicated. The ♀ is very similar above to the ♀ of *hyarbita*, but has a pure white transverse band on the forewing, reaching vein 2 and in cellule 2 further removed from the distal margin; beneath the ground-colour of both wings is light brown-yellow and the hindwing has a nearly straight rust-brown transverse line which crosses the white median band; this transverse line is entirely absent in *hyarbita* ♀ — Cameroons.

**C. hyarbita** Hew. (36 a) differs in the ♂ from *reinholdi* in having the basal part of the upper surface *hyarbita*. black instead of blue-grey; the black colour covers cellules 1 a—2 but not the base of cellule 3 on the hindwing and is posteriorly united with the narrow black marginal line; the submarginal line is absent or only indicated by dots. Beneath the wings are much darker and more varied than in *reinholdi*, having a median line, which is distinctly curved on the hindwing, and in the basal part of the hindwing a broad, black-edged, chestnut-brown curved band, while the distal part of the hindwing from the inner margin to vein 5 is dark brown. The ♀ (36 a) has a whitish transverse band on the forewing, not quite reaching vein 2, but in cellule 2 extending nearly to the distal margin, and beneath is entirely without the brown transverse line of the hindwing. — Old Calabar and Cameroons.

**C. hyarbitina** Auriv. (35 b) is smaller and darker, but otherwise very similar to the preceding species *hyarbitina*. and perhaps only a local race of it. The ♂ (35 b) differs from that of *hyarbita* in having the base of both wings above dark grey, cellules 1 c—3 on the hindwing dark brown, irrorated with black, and especially in having the submarginal line entire and at the inner angle strongly thickened; the distal margin is also much more broadly darkened than in *hyarbita*. The under surface agrees almost entirely with that of *hyarbita* ♂, but is somewhat lighter and has a distinct submarginal line. The ♀ is very similar to that of *hyarbita*, but smaller and with the median band of the hindwing only about 8 mm. in breadth; the ground-colour beneath is more yellow-brown. Congo region, on the Sankuru River.

**C. beckeri** H.-Schäff. (= *theodota* Hew.) (34 c). ♂: wings above light yellow, at the base bluish *beckeri*. grey; costal margin and a very broad marginal band on the forewing orange-yellow; hindwing with very



broad, anteriorly narrowed black-brown marginal band; submarginal line usually distinct on both wings. The under surface is yellow-brown and divided by a somewhat irregular transverse line into a basal area ornamented with large white spots and a distal area about 13—14 mm. in breadth, only marked with three dull, dark, dentate transverse lines. The ♀ is quite different from the ♂ above; the ground-colour is black with numerous sharply white spots; both wings grey-blue at the base; forewing with an angularly broken transverse streak in the cell, a longitudinal streak in 1a at the middle of the hindmargin and 2—4 spots in each cellule from 2b—6. The hindwing has a very large white median area, adorned posteriorly in 1c—3 with a bright orange-yellow spot, and in the black marginal band two rows of white spots; under surface grey-white with dark grey markings, agreeing pretty closely with those of the ♂; the median line of the hindwing is rust-yellow. Old Calabar to Angola; a quite common species. In the interior of the Congo region and in Uganda occurs *theodosia*. a second female form, *theodosia* Stgr. (36 a). This differs in having the median area of the hindwing pale yellowish and wanting the orange-yellow spot. — *theocranta* Karsch, of which only a single specimen seems to be known, strongly suggests a melanotic example of the ♀ of *beckeri*. Size and shape as in this; forewing above unicolorous black-brown and with only a longitudinal streak at the hindmargin and 5 oblong, greenish-margined submarginal spots in cellules 1b—5 whitish. On the hindwing the white spots in the dark marginal band are replaced by 5 white longitudinal rays, joined to the median area, in cellules 2—6; the yellow spot in cellules 1c—3 as in the type-form. Cameroons.

#### 4. *Lucasi* Group.

The species of this group really only agree in the narrow, straight, sharply defined white median band on the ♀ hindwing. For the rest, the first two species are very nearly allied and quite different in colour and markings from the third. The sexes are quite dissimilar and the ♀♀ considerably larger than the ♂♂.

*lucasi*. **C. *lucasi* Doumet** (34 a). Both wings beneath with quite straight, thick red-brown median line, which becomes black at the hindmargin of the forewing. ♂: both wings with the margins almost entire and with short black fringes; distal margin of the forewing from the apex to vein 3 straight, then slightly convex. Wings above intensive fiery orange; forewing only at the hindmargin with indication of a blackish median band and at the apex very narrowly blackish, otherwise unicolorous without markings, hindwing with a deep black median band, which is narrow at the costal margin but posteriorly becomes rapidly broader, almost reaches the anal angle and extends over the whole of the inner margin; at the anal angle in cellule 1c there is a fine black marginal line, which is otherwise entirely absent. Beneath the wings are dull yellowish, in the basal half of the hindwing whitish grey and except in the cell of the forewing without distinct margins; the submarginal line only stands out very indistinctly. The brilliant colour on the upper surface and the sharp contrast between the black and the orange render the ♂ of *lucasi* one of the most striking of the African butterflies. The ♀ is much larger, above black, at the base of the forewing broadly yellow-brown or red-brown, with a common narrow white median band and a deeply dentate thick white transverse line, which proximally borders the submarginal line. The under surface is whitish grey, somewhat darker at the base, with a thick dark brown to blackish median line and large blackish postdiscal spots on the hindwing and in cellules 1a—2 of the forewing; the submarginal line is fairly distinct. Old Calabar to Gaboon.

*cloetensi*. **C. *cloetensi* Seeldr.** (35 a). ♂: wings above unicolorous orange-yellow, at the base darker, brown-yellow; at the anal angle of the hindwing in 1c and 2 with fine black submarginal line; under surface quite as in *lucasi* ♂. The ♀ only differs from that of *lucasi* in having the upperside of the forewing black at the base, not red-brown. Southern Congo, on the Sankuru River.

*egesta*. **C. *egesta*.** Hindwing with the anal angle in the ♂ somewhat produced, in the ♀ rounded; distal margin of the forewing in the ♂ nearly straight, in the ♀ deeply excised beyond vein 6. The hindwing in both sexes close beyond the apex of the cell with a straight, narrow, white (or in the ♂ light yellow), black-edged median band. In the ♂ the forewing is light ochreous yellowish above, more or less darkened at the base especially in cellules 1a—2; the light median band of the hindwing is usually continued on the forewing to vein 2 or 4; the angled submarginal line is incomplete or only indicated by dots. In the ♀ the upper surface of the wings is black-grey to blackish, at the distal margin and at the apex of the forewing somewhat lighter; the white median band is continued on the forewing as far as vein 6 and there runs into a large yellowish costal spot; submarginal line thick and black. Beneath the wings are brown-grey (♂) to grey (♀), with fine, dark median line, on the hindwing straight and light-margined, on the forewing irregularly waved; the basal part has well developed dark transverse markings. — In the northern race, *egesta* Cr. (34 b), the light transverse band of the forewing in the ♂ is indistinct or at least not margined with black; the light transverse band of the hindwing is distally somewhat dentate and usually sharply bordered with black on both sides; occasionally this black bordering is very narrow or absent (ab. *degesta* Stgr.). Sierra Leone to Gold Coast. — *confusa* Auriv. (= *megaesta* Stgr.) (34 a, b; 36 a) is on average larger and further differs in the ♂ in having the light median band continued to vein 3 or 4 of the hindwing and there also broadly bordered with black. Old Calabar to Congo and Uganda.



5. *Lurida* Group.

The ♂♂ of this group are easy to recognize by the strongly produced, almost lobed anal angle of the hindwing; the distal margin of the forewing is straight or nearly so and both wings above have the ground-colour brown-yellow to ochre-yellow or almost orange. In the ♀♀ on the contrary the hindwing is usually rounded at the anal angle and the forewing deeply emarginate at the distal margin. The ♀♀ are usually dark above and have on the forewing a white or whitish transverse band, running vertically from the costal margin and mostly reaching the hinder angle.

**C. lurida** differs in the ♂ from the following species in having the upperside of the hindwing yellow-brown to brown-yellow from the base to beyond the middle and without black median band. The ♀♀ have a sharply defined white transverse band on the forewing. — **lurida** *Btlr.* (34 d). In the ♂ both wings above have *lurida*. the ground-colour brown-yellow, at the base darker yellow-brown; the forewing has a narrow black-brown marginal band, only 2 mm. in breadth, but is otherwise without markings; the hindwing has a black-brown marginal band, 14—15 mm. in breadth at the anal angle and gradually narrowing towards the costal margin, the black submarginal line showing distinctly in this band. In the ♀ (= *hesione* *Weym.*) the wings are black-brown above with black submarginal line and narrow black median band on the hindwing; the white transverse band of the forewing is 10 mm. in breadth in the middle. The under surface in both sexes is brightly marked with reddish median line and yellow (♂) or white (♀) spots. Ashanti to Angola. — **hesiodotus** *Stgr.* (34 d ♀, *hesiodotus*. not ♂) only differs in the upperside of both wings in the ♂ being bright red-brown at the base and in the ♀ having the transverse band of the forewing narrower and bearing a broad red-brown marginal band on the hindwing. Ogowe. — In the ♂ of **butleri** *Grünb.* the dark marginal band *butleri*. on the upperside of the forewing is broader, about 3.5 mm. in breadth at the costal margin, basally prolonged as in *hypatha* ♂ and accompanied proximally by black submarginal dots; the marginal band of the hindwing not sharply defined proximally. The ♀ differs from the type-form in having the ground-colour dark coffee-brown, only in the apical part of the forewing black-brown, and the transverse band of the forewing narrow and interrupted by black markings. Uganda. — **sublurida** *Fruhst.* differs from the type-form in having *sublurida*. the marginal band of the hindwing almost obsolete and that of the hindwing much narrower; the ground-colour is also lighter. Fernando Po. — **colmanti** *Auriv.* has the ♂ lighter above; the forewing with the marginal *colmanti*. band narrower, but widened at the apex; the hindwing without dark marginal band, but with sharply prominent black lunulate line and at the distal margin sprinkled with black scales. The white transverse band of the forewing in the ♀ only 4 mm. in breadth. Northern Congo. — **congoensis** *Suff.* is very similar to the preceding *congoensis*. species and only differs in the ♂ forewing having deep black submarginal spots in cellules 6—8 and in the lunulate line of the hindwing being proximally more or less broadly margined with black. Congo.

In the ♂♂ of the following species the hindwing has on the upperside a dark median line or median band or is black or blackish in the basal part to beyond the middle.

**C. ochreata** *Smith.* ♂: ground-colour of both wings orange-yellow above; forewing without markings *ochreata*. in the cell and without distinct dark median line; the submarginal dots are small and the dark marginal band is only distinct at the apex. Hindwing only a little darker at the anal angle and with a narrow dark median line and a similar, dentate submarginal line, but at the distal margin not or scarcely darkened; the cell with some indistinct transverse markings. ♀: both wings above dark brown from the base to the middle, then much lighter and with a dark transverse line, accompanied proximally on the forewing by 5 triangular spots and on the hindwing near to the inner margin by two semi-elliptical brownish white spots. Only known from the large primeval forests in the northern Congo region. — **cycladina** *Grünb.* appears only to differ from the type-form in the ♂ *cycladina*. having on both wings a distinct dark marginal band above and consequently stands in almost the same relation to *ochreata* as *butleri* *Grünb.* to *colmanti* *Auriv.* Uganda.

**C. cyclades** *Ward* (34 b). ♂: both wings bright orange above, at the base somewhat darkened; *cyclades*. forewing only with small submarginal dots, fine marginal line and a small hindmarginal spot in cellule 1 a black or blackish; hindwing with a blackish median band about 3 mm. in breadth, anteriorly broken up into spots, and a black submarginal line, separated by the yellow ground-colour from the marginal band; the latter 3 mm. in breadth. The ♀ is unknown to me. Cameroons.

**C. bonnyi** *Smith.* In the ♂ the wings are yellow-brown above, darker at the base and at the anal angle *bonnyi*. and distal margin of the hindwing; forewing with 2 dentate lines in the cell, an olive-brown transverse line between the hindmargin and vein 3, small submarginal dots and the distal margin irrorated with black. Hindwing above with an olive-brown median band, sharply defined proximally, and a submarginal row of confluent, sagittate spots, distally margined with yellow-brown; the base, the inner margin and the distal margin are sprinkled with dark scales. On the Aruwimi River in the north-eastern Congo region. — **orphnina** *orphnina*. *Karsch* is probably a ♀-form of *bonnyi*. The distal margin of the forewing very deeply emarginate beyond vein 6; anal angle of the hindwing produced almost as in a ♂. Wings above light brown; forewing with three undulate black-brown transverse lines in the cell and two similar lines distally to them between veins 4 and 7;



in cellule 3 begins a black-brown transverse band, 6—7 mm. in breadth, which is continued to vein 1b on the hindwing; the submarginal line on the forewing is narrow, but on the hindwing widened into a black-brown band 5 mm. in breadth; between the median band and the submarginal band the ground-colour is grey; distal margin of both wings light brown, not darkened. On the Ituri River.

*heliada.* **C. heliada** Hew. (35 b). In the ♂ the wings are light orange above with a common black lunulate submarginal line, which, however, is well separated from the darkened marginal band of about 2 mm. in breadth; forewing dark olive-brown at the base as far as vein 2 and with two sinuous transverse lines in the cell; hindwing from the base to far beyond the middle blackish or often somewhat lighter at the base and then with broad black median band, sometimes cleft at the costal margin. Under surface light yellow with brown markings and straight brown-red median line. In the ♀ both wings above are blackish in the basal part to beyond the middle, with two large yellowish spots in the cell of the forewing; the apical part of the forewing is whitish grey, at the distal margin black-grey, with two dentate black submarginal lines; the whitish grey colour reaches the middle of the wing in cellules 3—6 and at the costal margin, but in cellules 1b and 2 has a breadth of only about 10 mm.; the hindwing has a brown-grey marginal band 10 mm. in breadth, spotted with white in cellules 6 and 7 and with sharply marked black lunulate line. Cameroons to Kassai.

*hesiodus.* **C. hesiodus** Hew. In the ♂ the wings are orange above, not or little darkened at the base, and with a sharply defined black-brown marginal band 4 mm. in breadth, which reaches the outer extremities of the fine lunulate line, but leaves free its inner extremities, which show a punctiform thickening; hindwing with deep black median band, 8—10 mm. in breadth, not sharply defined, extending to the inner margin and at the anal angle joining the marginal band; under surface grey-brown, weakly marked, with a dentate median line. In the ♀ the distal margin of the forewing is deeply emarginate behind the apex and the basal half of both wings dark violet-brown above; this colour is distally bounded by a blackish band, then follows a light band, which begins somewhat beyond the middle of the costal margin on the forewing and is white as far as vein 2 of the forewing, but in cellules 1a and 1b and on the hindwing brown-yellow and about 7 mm. in breadth; on the forewing the apical part distally to the transverse band is blackish, with three white dots in 3—6, but on the hindwing the marginal band and the submarginal line are almost exactly as in the ♂. Gaboon to Angola.

*hesiodina.* **C. hesiodina** Arn. *Schultze* is near the preceding species, but is smaller, having an expanse of about 54 mm. The forewing of the ♂ is orange, at the base brown-yellow as far as vein 2, the marginal line very narrow, only widened at the apex, and the submarginal line entirely absent or only indicated by minute dots; at the middle of the hindmargin a black patch, which scarcely reaches the middle of cellule 1b. The hindwing is deep black from the base to far beyond the middle; in cellules 1c—5 the black colour nearly reaches the lunulate line, but is more restricted in cellules 6 and 7, the orange-colour of the marginal band here extending basewards for a breadth of 6 mm. The under surface with yellow ground-colour, brown markings and red median line, on the forewing indistinct. ♀ unknown. Was discovered in 1896 in North-West Cameroons at the upper Cross River by Lieutenant ARNOLD SCHULTZE.

*hypatha.* **C. hypatha** Hew. (34 d). In the ♂ the wings are light orange above, darkened with brown-grey at the base and with a common deep black median band, 12—13 mm. in breadth, but terminating on the forewing at the base of vein 3; the marginal band is 3 mm. in breadth and completely separated from the submarginal line, which is but little sinuous and often only represented by dots. The under surface is light smoke-brown with black transverse markings in the basal part and reddish median line. The ♀ is very similar to that of *fumana* (34 c) and only differs in having the light marginal band of the upper surface broader and at the distal margin more or less darkened and with the lunulate line nearly in the middle; the median line of the under surface is reddish, sharply expressed, curved basewards at the costal margin of the forewing. Gold Coast to Cameroons.

## 6. *Fumana* Group.

The species of this group are nearly related and are easy to distinguish from the other groups. The distal margin of both wings and especially of the hindwing is strongly undulate and that of the forewing in the ♂ moderately, in the ♀ deeply emarginate in the middle. The sexes are quite unlike on the upperside. In the ♂♂ the hindwing is unicolorous black or blackish above or has a yolk-yellow to orange marginal band 5—7 mm. in breadth, in which is placed a submarginal line, either continuous or broken up into dots; the forewing on the other hand has the apical half light yellow to tan-coloured and the basal part entirely or for the most black or blackish. In the ♀♀ the hindwing has always a broad yellow marginal band and the forewing is either blackish to the apex or has before the distal margin a broad yellow band, similar to the marginal band of the hindwing; in addition the forewing has a transverse row of 3—6 white spots in the basal part of cellules 4—6 or 2—6 and 9 or a continuous white transverse band, running vertically from the costal margin in the direction of the hinder angle. On the under surface both wings have large white or whitish spots in the cell and in the basal part of cellules 1c, 7 and 8 of the hindwing and 1b, 4, 5 and 6 of the forewing; a dark median line forms the distal boundary of the basal area and is often accompanied proximally by light spots.

*fumana.* **C. fumana** Westw. (34 c). The hindwing above black with a yellow marginal band 6 (♂)—8 (♀) mm. in breadth, extending from the anal angle to the costal margin; the submarginal line only continuous in cellules



1c—2 (3), otherwise broken up into spots. The forewing in the ♂ light yellow with a very large black hindmarginal spot, anteriorly rounded and limited by vein 3, and completely covering the base of cellules 1a—2, and with a blackish marginal line; cell more or less darkened brown-yellow; submarginal dots usually present. In the ♀ the forewing is black above with three small white spots beyond the apex of the cell in cellules 4—6 and with broad yellow marginal band, which is separated by a thick blackish marginal line from the distal margin itself. Gold Coast to Kuilu.

**C. alexander** Suff. Of this species only the ♀ is known. It is similar to that of *fumana* (34 c), but *alexander*. differs in having on the upperside of the forewing instead of the three white spots a white transverse band 3—4 mm. in breadth, extending from the costal margin at least to vein 3, while the marginal band of the hindwing is much broader, 8—13 mm., and strongly narrowed towards the anal angle. The distal margin of both wings is less dentate than in *fumana*. From Pungo Andongo in Loanda.

**C. diphyia** Karsch (35 a) differs in both sexes from *fumana* (34 c) in that the tan-yellow marginal *diphyia*. band of the hindwing terminates anteriorly in cellule 6 or at most reaches vein 7 and encloses a thick continuous, or almost continuous submarginal line. In the ♂ the black hindmarginal spot of the forewing covers almost the whole of the cell and in cellules 1a and 1b nearly reaches the distal margin. In the ♀ the forewing is blackish above to the apex, with a transverse row of 5 white conical spots in cellules 2—6 and a complete submarginal row of white, black-dotted crescents. Congo and Ruwenzori.

**C. fumosa** Stgr. (35 a ♂, not ♀). In the ♂ the hindwing is unicolorous black above, without mark- *fumosa*. ings. The forewing is light yellow with narrow black marginal band, large triangular black submarginal spots in 3 and 4 and a large, anteriorly rounded hindmarginal spot, reaching the base of vein 3 but in cellules 1b and 2 separated by the yellow ground-colour from the dark marginal band. The ♀ is unknown. Kuilu River. *superba* Auriv. ♀.

**C. haynae** Dew. (36 a). Of this species also only the ♂ is known; it only differs from that of the *haynae*. preceding species in the dark hindmarginal spot of the forewing reaching the distal margin in cellules 1a and 1b, and anteriorly extending little beyond vein 2 and being only weakly curved; the dark marginal band is much thickened in cellules 3 and 4, but forms no independent submarginal spots. Median band of the under surface very broad and blackish. Congo.

*= ♀ of fumosa*  
**C. superba** Auriv. is only known in the female and is perhaps the ♀ to one of the preceding species. *superba*. It has an expanse of 90 mm. and quite agrees in shape with the other ♀♀ of this group. Both wings are black above; the forewing has a white transverse band 7 mm. in breadth, extending from the middle of the costal margin nearly to the hinder angle and enclosing one or two dark spots in cellules 1a and 2; the hindwing has a dark yellow marginal band 11—12 mm. in breadth, which terminates anteriorly in cellule 6 and is separated from the distal margin by a thick dark marginal line; the submarginal line is widely removed from the distal margin and only represented by free, tear-shaped black spots. The white transverse band of the forewing is reproduced beneath; the hindwing beneath has a white median band about 2 mm. in breadth. South Cameroons.

## 7. Caenis Group.

The numerous species of this group only agree in the characters given in the synopsis and are often very different beneath, but at the same time form such a series of gradations that they cannot be further subdivided. The sexes are usually quite different above in colour and markings and the identity of the ♂♂ and ♀♀ is still uncertain in many cases.

**C. herminia** Smith (35 a). In the ♂ both wings above have the ground-colour cream-yellow, at the *herminia*. distal margin broadly ochre-yellow. The base of both wings and the inner margin of the hindwing for a breadth of 5 mm. deep/black; immediately beyond the middle runs a black-brown discal band, also 5 mm. in breadth, beginning in cellule 6 of the forewing and joining the black inner-marginal band in cellule 1c of the hindwing; hence the light median band is distally dark-margined and on the hindwing posteriorly terminates in a sharp triangular point; the distal area is ochre-yellow outside the discal band and traversed by the black submarginal line, which is formed of sagittate spots; the distal margin itself is narrowly darkened and is almost entire. The ♀ is unknown. Cameroons and Congo region to Lake Albert Nyanza. — **althea** Drury is only known *althea*. to me from the figure in DRURY's work; it may possibly be the ♀ of *herminia*. Both wings black-brown above, at the distal margin somewhat lighter brown, somewhat beyond the middle with a straight white transverse band only 2 mm. in breadth and whitish submarginal spots, in a sharply angled row; the forewing in addition with three white spots in the basal part of cellules 4—6. Sierra Leone.

**C. weymeri** Suff. (35 c). The ♂, as the figure shows, approaches that of *herminia*, but differs in having *weymeri*. both wings broadly black at the distal margin, the black colour almost reaching the triangular, deep black



submarginal spots and basally bounded by a deeply angled line of the ground-colour, which is much thickened in cellules 5 and 6; the under surface has a sharply defined, straight median line, which separates the whitish basal part from the brown distal part. The ♀ is black above with a white median band 3 mm. in breadth, proximally sharply, distally somewhat irregularly defined, at the costal margin of the forewing slightly curved towards the base; the long, conical, deep black submarginal spots are proximally not or only indistinctly light-bordered; beneath both wings are grey with a brown median line, which is basally accompanied by a white band and in cellules 5 and 6 of the forewing crosses the band. Cameroons.

*johnstoni*. **C. johnstoni** *Btlr.*, of which only the ♂ is known, nearly approaches the preceding species, but has an expanse of 68—70 mm. and the light median band of the upper surface is broader and distally prolonged into teeth at the veins. Toro.

*staudingeri*. **C. staudingeri** *Auriv.* In the ♂ the upperside of the wings agrees in the main with the ♂ of *weymeri*; but the light median band on both wings is not straight-edged distally, but widened distad in the middle and has consequently a different, more irregular shape; the coniform submarginal spots in cellules 3 and 4 of the forewing are much produced basewards and more than twice as long as the corresponding spots in cellules 1 b, 2, 6 and 7; the thick, light line which proximally borders the submarginal spots is hence strongly curved proximad in the middle. On the under surface the light basal part (at first light grey, then white) is distally bounded by a straight brown median line; the distal part is somewhat clouded brown-grey with a fine dentate submarginal line. Both wings are somewhat shorter and broader than in *weymeri*. Is perhaps the ♂ of the following species. Cameroons.

*indamora*. **C. indamora** *Hew.* is similar to the ♀ of *hewitsoni* (35 b), but has the white transverse band of the forewing narrower, 4 mm. in breadth, sharply defined and reaching at most to vein 2, the median band of the hindwing also narrower and sharply defined; the submarginal spots of the hindwing are small, consisting of dots or dashes. Beneath the basal part of the hindwing is distally bounded by a fine, straight median line. Old Calabar.

*hewitsoni*. **C. hewitsoni** *Stgr.* (35 b). The ♂ scarcely differs from that of *C. staudingeri* above, but beneath is entirely without the median line. In the ♀ the forewing has a white transverse band above, beginning at the middle of the costal margin, reaching at least to vein 2 and much widened in cellule 2; a light spot in the cell; the white median band of the hindwing is about 11 mm. in breadth; beneath the median line is absent and the basal part of the hindwing is distinctly emarginate; otherwise the markings are almost the same as above. Cameroons.

*aurivillii*. **C. aurivillii** *Stgr.* is an East African species, and is closely related to the preceding, especially to *C. weymeri* (35 c). The ♂ is distinguished by having the light, nearly white median band of the upper surface much reduced on account of the spread of the black colour; on the forewing it reaches neither the costal nor the hindmargin and only covers the apex of the cell and the base of cellules 2—5; on the hindwing it forms a large triangular median spot between veins 2 and 7; the submarginal markings are similar to those of *C. weymeri*; the under surface is yellow grey with a nearly straight brown median line. The ♀ differs but little from that of *C. weymeri*, but has a somewhat broader white median band and more distinct proximal white bordering to the submarginal spots. German East Africa.

Whilst the previously mentioned species of the *Caenis* group agree in the ♂ having the light median area of both wings distally bounded by a continuous black postdiscal band, which at least in cellules 1 a and 1 b of the forewing is 5—6 mm in breadth, the ♂♂ of the following species are distinguished by this band being entirely absent or represented only by a row of postdiscal spots running parallel with the submarginal line and like this sharply angled. The light ground-colour of both wings is consequently much more extended, usually occupying the greater part of the surface. In the ♂♂ of these species the wings have therefore the following dark markings above: a uniformly broad and almost even marginal line or band, a submarginal line which is sharply dentate or composed of sagittate or coniform spots and sometimes also a similar postdiscal line running parallel with the submarginal line (cf. *consanguis* ♂, 35 a). The basal part of both wings is more or less broadly darkened. In the ♀♀ the marginal band, the submarginal line and the postdiscal line are much widened and confluent, so that only a few light spots are left between the submarginal and the postdiscal line; the basal part is also very broadly darkened, only a narrow white median band remaining of the light ground-colour of the ♂.

*caprina*. **C. caprina** *Auriv.* ♂: wings above with the ground-colour light grey; the base of the forewing to vein 2 and of the hindwing to the apex of the cell yellow-brown; distal part with broad marginal band, black submarginal line and complete postdiscal line, much thickened at the costal and hindmargins of the forewing; the hindwing in addition shortly beyond the apex of the cell with a straight, even, black-brown median line; the under surface with straight, prominent brown median line; distal margin of the forewing deeply emarginate in the middle. The ♀ is unknown to me. Congo region, at the Sankuru River.

*capella*. **C. capella** *Ward* (35 b). The ♂ is similar to that of *caprina*, but is larger and of a lighter, cream-yellow ground-colour, basal area of the forewing more grey and at the hindmargin extended to beyond the



middle of the wing, black-brown median line of the hindwing broader, prolonged to vein 2 of the forewing. The ♀ is black-brown above to beyond the middle, with distinct median line, ground-colour at the distal margin of the hindwing broadly ochre-yellowish; the forewing has a broad whitish transverse band, beginning at the middle of the costal margin, reaching vein 2 or 1 and varied by the median line and the spots of the postdiscal and submarginal lines. Cameroons to the Kuilu River.

**C. eris** *Auriv.* The ♂ is the size and shape of *caprina*, but differs in having the basal part lighter, bluish grey, and the median line of the hindwing above entirely absent; the postdiscal and submarginal lines are complete and blackish; the median line of the under surface is nearly straight and stands out sharply. The ♀ is similar to that of *capella* (35 b), but differs in having the white transverse band of the forewing more indistinctly defined, but that of the hindwing in cellules 2—5 sharply defined, almost unmarked and about 5 mm. in breadth; the white spots at the base of cellules 2—5 on the forewing stand out sharply. Congo; rare.

**C. amphicede** *Cr.* This very rare species closely approaches the following, but is smaller and much more strongly marked; the costal margin of the forewing is much more broadly black-scaled and the postdiscal and submarginal transverse lines are much thicker and more sharply dentate; the under surface is lighter, white-yellowish. This species was described and figured by CRAMER as long ago as 1777 from a specimen from "Guinea". It has not been found since; there is, however, an old specimen in the Museum für Naturkunde in Berlin which is possibly the original example figured by CRAMER.

**C. consanguis** *Auriv.* (35 a). ♂: both wings above cream-coloured, at the base narrowly dusted with bluish grey; inner margin of the forewing brownish to vein 2 or at least to the fold of cellule 1c; the postdiscal row of spots complete, but sometimes not quite confluent; the median line of the under surface occasionally shows through above, but is there not distinct. The ♀ is black-brown above with white median band, only 3—4 mm. in breadth, with the proximal boundary straight, and is consequently similar to the ♀ of *caenis* (35 c), but always differs from it in having the black basal part of the upperside of the forewing cut off quite straight and evenly in cellules 1a—3; the ground-colour of the under surface is a fairly uniform dark grey. Larva dirty yellow with glossy black head and black spines; head and body thinly clothed with short, fine hairs; first and twelfth segments quite unarmed; segments 2—11 each with two dorsal spines and at each side a small lateral spine; the dorsal spines are long and strongly built, erect and widened at the base into a shiny plate; the first two and the last pair are somewhat longer, have 6—8 small lateral spines and 4 terminal points, the others have only three lateral spines below the middle and three terminal points. Of the lateral spines those on segments 2 and 3 are very short and simple, the rest short-stalked with the tips four-branched. The pupa has two short points on the head, but no other spines or protuberances; the distal margin of the wing-cases is very sharply keeled and above black; along the dorsum from the anterior margin of the mesothorax to the anal extremity runs a sharp longitudinal carina; the cremaster is bent round almost at right angles towards the ventral side. Cameroons.

**C. caenis** *Drury* (35 c) is the commonest and has been known the longest of all the *Cymothoë*-species. In the ♂ the ground-colour of the upper surface is very light, yellowish white or nearly white, and only very little darkened at the base; the inner margin of the hindwing is only darkened to the fold of cellule 1c; the postdiscal line is broken up into spots and often incomplete, the spots in cellules 3—6 of the hindwing being absent or only represented by dots. The ♀ is variable; in the normal form (here figured) the white transverse band is 4—6 mm. in breadth and is sharply, but irregularly defined proximally. Sierra Leone to Angola and Uganda. ♀-ab. **dumensis** *Strand* differs in having the basal area of both wings strongly dusted with rust-reddish. Cameroons. ♀-ab. **euthalioides** *Kirby* has a broader white median band, 7—12 mm. in breadth, proximally without sharp boundary and encroaching into the basal area. In ♀-ab. **conformis** *Auriv.* the light ground-colour of the upper surface has almost the same distribution as in the ♂; the present form differs, however, from the ♂ in shape, in the fine black transverse lines in the cells and the thicker transverse lines before the distal margin. It is confusingly like the female form of *adelina* (35 d). Congo. — **C. caenis** is one of the few butterflies which sometimes congregate in innumerable swarms and, like the locusts, fly for hours in the same direction in extensive migrations. Such a flight was once observed in the Cameroons by the Swedish colonist K. KNUTSON.

**C. coranus** *Smith* (35 c) is a little larger than *caenis* and only differs in the male in having the veins above more broadly darkened at the base and without postdiscal spots; the marginal band is widened and almost completely united with the submarginal line. In the ♀ the white median band is about 7 mm. in breadth and at vein 4 of the forewing vertically bent towards the costal margin. Natal to British East Africa.

**C. harmilla** *Hew.* is only known in the female and is evidently allied with the preceding species. Its expanse reaches 85 mm.; both wings are blackish above in the basal half; the dark colour is deeply incised on the forewing in cellules 2—5, but on the hindwing sharply defined and weakly curved; the distal part of the forewing is light grey with black, sharply angled postdiscal and submarginal lines and dark marginal band and a median line represented in cellules 2—6 by dark crescents; the hindwing has a whitish grey median band only 2 mm. in breadth and a dentate light grey line between the marginal band and the submarginal line; the under surface with straight black median line. Cameroons.



*adelina*. **C. adelina** Hew. (35 d). In the ♂ the wings are dark cream-yellow above, at the distal margin and at the anal angle of the hindwing more or less broadly orange; the base is but little dusted with grey; the post-discal line is entirely absent or only indicated in cellules 2 and 3 of the hindwing; the submarginal line is almost uniformly dentate and well separated from the dark brown marginal band. The under surface has a red-brown median line and black-grey or dark brown markings in the basal half. The ground-colour of the ♀ is usually rust-brown above, but presents a series of transitional forms leading to an almost white ground-colour as in the specimen figured; the markings are nearly the same in all specimens and the submarginal spot in cellule 4 of the hindwing is always very large and much prolonged proximally; in the dark forms a light median band is sometimes present. Cameroons to Angola. In ♀-ab. **corsandra** Druce the wings are black-brown above, with a rust-brown median band 4 mm. in breadth.

*adela*. **C. adela** Stgr. The ♂ is very similar to that of *adelina* (35 d), but has the ground-colour above bright, light ochre-yellow, not becoming darker at the distal margin, and the dark marginal band is broader; the hindwing is more produced at the anal angle than in *adelina* and the cells of both wings have distinct dentate black transverse lines. Concerning the ♀ STAUDINGER writes: "The ♀ closely resembles those of many other *Cymothoë*-species; the upper surface shows a darker (smoke-grey) basal area, distally strongly dentate, followed as far as to the narrow dark distal margin by a broad white area, which here bears a dark transverse line and two dark dentate bands; of the latter the inner is rather deeply dentate, the outer much more weakly and with a darker spot in each tooth; the ♀ of *adela* differs from that of *adelina* particularly in the more prominent black transverse line (median line) on both surfaces, which in *adelina* ♀ is always absent above, the far more weakly dentate, darker transverse line before the distal margins (= the submarginal line) and in having the basal area of both wings darker and more strongly dentate distally". Sierra Leone.

*amenides*. **C. amenides** Hew. (35 d) is only known in the female. The black basal area of the upper surface is rather evenly bounded distally; the white median band is nearly straight and 4—6 mm. in breadth; between the submarginal line and the broad postdiscal band are placed on both wings a row of large, sharply defined lunulate or almost coniform white spots. Gaboon.

**C. alcimeda** is the smallest species of *Cymothoë*; it approximates rather closely to *C. consanguis* and *caenis*, but differs from all the other species of the group in the hindwing in both sexes having distinct rust-yellow marginal spots at the extremities of the veins, which unfortunately are not brought out in the figure. In the ♂ the forewing is deeply emarginate at the distal margin and the hindwing distinctly produced at the anal angle; both wings above light yellow, cream-coloured, at the base narrowly darkened and with a complete submarginal line, thickened in cellules 3 and 4; the postdiscal line is always complete on the hindwing. In the ♀ the wings are blackish above with common yellowish white median band, broader on the hindwing, and rounded white spots between the thick submarginal line and the narrow postdiscal line; the under surface with brown median line, strongly curved on the hindwing. The species is confined to South Africa and there only occurs in wooded country. — **alcimeda** Godt. In the ♂ the forewing above has distinct dark transverse lines in the cell and a complete postdiscal line, in the ♀ the light median band is narrow and the submarginal line little distinct. In the western parts of Cape Colony. — **trimeni** subsp. nov. (35 e, as *alcimeda*) differs in the ♂ in having the cell of the forewing above unicolorous without markings and the postdiscal line only developed in cellules 1 a and 2 and in the ♀ in the light median band being broader and the submarginal line deep black and distinct. Eastern parts of Cape Colony, Kaffirland, Natal, Zululand and the Transvaal.

The following species differ from the preceding in that in the male the postdiscal line does not occur as an independent line or band, but only as a very irregular proximal black bordering to the submarginal line, and in the female the black marginal band is divided or almost divided by large white, distally produced submarginal spots.

*jodutta*. **C. jodutta** Westw. (35 e). In the ♂ the wings are cream-yellow above, at the base narrowly dusted with grey and at the distal margin with broad blackish marginal band, broader at the anal angle of the hindwing and in cellules 3 and 4 of the forewing and enclosing the undulate, deep black submarginal line; the ground-colour extends far into the marginal band in cellules 5 and 6 of the forewing; the under surface is bright light yellow with sharply prominent median line, on the hindwing red-brown, on the forewing black, and the usual black transverse markings in the basal part; the hindwing with ferruginous transverse band between the costal margin and the apex of the cell. In the ♀ the wings are blackish above with white transverse band 5—6 mm. in breadth, divided at the costal margin of the forewing by a transverse spot as far as vein 5, which at the hindmargin of the forewing is placed much further distad than on the hindwing; the postdiscal line is narrow, complete, sharply dentate and separated by a more or less large white lunule from the deep black submarginal line, which is composed of coniform spots; the white submarginal (marginal) spots are sometimes small and little distinct; the under surface is brown-grey in the basal part. Liberia to Cameroons. — **ehmcke** *ehmcke* Dew. (35 d) is the more southern race and only differs in the ♂ in having the dark marginal band on the upper-side of the forewing broader and in cellules 5 and 6 or at least in 6 completely separating off a light spot from the ground-colour and in the white median band of the ♀ being narrower and the white marginal spots larger. Congo.



*C. ciceronis* Ward (35 c) is only known in the female and may possibly be only a ♀ form of the pre-*ciceronis*. It has the white median band narrower and straighter, not divided at the costal margin, and the marginal spots somewhat larger, the under surface either has the same ground-colour as in *jodutta* ♀ or occasionally is tinged with greenish. Cameroons.

*C. seneca* Kirby <sup>also</sup> is another female form nearly allied to *jodutta* ♀. It only differs from *ciceronis* (35 e) *seneca*. in having the white median band 5 mm. in breadth and at the costal margin of the forewing divided by a narrow transverse mark and widened to a breadth of 12—13 mm. Cameroons.

### 8. Sangaris Group.

The ♂♂ are easily known by the dull golden yellow or bright red upper surface. The ♀♀ on the other hand either have the basal part of both wings above red-yellow to reddish and distally dentate or bear a large red spot on the forewing or are blackish with a broad white median band. In the latter case they cannot be sharply separated by any general characters from the ♀♀ of the preceding group.

*C. preussi* Stgr. (35 e) is a very distinct species in the colouring and markings of both sexes and *preussi*. in certain respects forms a transition between this group and the preceding. In the ♂ the upper surface of the wings is uniform dull, light brown-yellow or almost gold-yellow with fine black marginal line, dotted with white between the veins, and complete or almost complete undulate or bluntly dentate submarginal line; the cells with or without black transverse lines; the under surface is very similar to that of *coccinata* and has like the latter a large, quadrate whitish spot in the middle of cellule 7 at the costal margin of the hindwing. In the ♀ both wings are orange above in the basal part and beyond this, as the figure shows, blackish with white spots. Cameroons.

*C. haimodia* Smith has the female very similar to that of *preussi*, only differing in having the apical *haimodia*. part of the forewing and the marginal band of the hindwing purer black and without indistinct light markings; the forewing has sharply defined, undivided white discal spots in cellules 2—6 and 2 similar subapical spots in 5 and 6; the white postdiscal spots of the hindwing are large and sharply defined. The ♂ is unknown. Cameroons.

*C. coccinata* Hew. (36 b, c, d). In the ♂ the wings are bright scarlet above with fine black marginal *coccinata*. line, not or but little widened at the apex of the forewing, and black submarginal dots or (on the hindwing) submarginal lunules. The under surface yellow-brown, before the distal margin violet-grey; median line red-brown to blackish, dentate; the hindwing at the costal margin in the middle of cellule 7 with a quadrate white or whitish spot, which is often indicated above also. The ♀ is black-grey above, in the basal part of the forewing to beyond the middle and in the basal half of cellules 1 a and 1 b of the forewing yellow-red; the black submarginal spots are very elongate, coniform and light-margined. Old Calabar to the southern Congo region and Uganda.

*C. anitorgis* Hew. (36 c, as *aramis* ♂). The ♂ is similar to that of *coccinata*, but differs in the orange- *anitorgis*. red ground-colour of the upper surface and the thicker black marginal line, at the apex of the forewing widened as far as the middle of cellule 6. The ♀ above blackish at the base, at the distal margin broadly black-grey with a white median band 5 mm. in breadth, more or less darkened at the costal margin of the forewing; the submarginal spots are deep black, very elongate conical and the postdiscal line much lighter, very deeply dentate. Cameroons, Gaboon, Congo. ♀-ab. *leonis* ab. nov. (36 b) only differs from typical ♀♀ *leonis*. in the broader white median band. In ♀-ab. *misa* Strand the white median band is still more widened and *misa*. almost reaches the distal margin. Cameroons.

*C. aramis* Hew. (36 c ♀). The ♂ is unknown, but may perhaps be identical with the ♂ of *anitorgis*, *aramis*. in which case the species would have four female forms. In the ♀ the wings are black-grey above, with a very large red spot at the hinder angle of the forewing and a white median band on the hindwing; in cellules 4—6 this band is narrowly bordered with reddish distally. Old Calabar to the southern Congo.

*C. sangaris* Godt. In the ♂ both wings are deep blood-red above, with fine black marginal line, not *sangaris*. or scarcely widened at the apex of the forewing, and a submarginal line usually broken up into spots; the under surface is dark brown with red median line, but without light spot at the costal margin of the hindwing. In the ♀ the wings are grey above, the basal part very variable; dark grey—yellow-brown—orange-yellow; a somewhat sinuous brown median line is usually conspicuous and the postdiscal and submarginal lines are sharply dentate and distinct; on the other band there is no white band. Sierra Leone to Angola and Uganda. ♂-ab. *reuteri* Strand only differs in having the submarginal spots on the upper surface small or absent and the *reuteri*. under surface lighter. Cameroons.

*C. angulifascia* Auriv. (36 b), of which the ♂ is unknown, differs from all other *Cymothoë* ♀♀ in the *anguli-* white median band, which on the hindwing is 7 mm. in breadth, at the costal margin of the hindwing *fascia*.



and the hindmargin of the forewing much narrowed, and then again becoming broader is rectangularly bent round towards the costal margin at vein 3 on the forewing. The under surface is lighter with the ground-colour red-brown. French and Belgian Congo.

*ogova*. **C. ogova** Plötz (36 b) is a female form of uncertain location. It differs from the other ♀♀ of this group in having the white median band narrow and dentate on the hindwing, but on the forewing much widened towards the costal margin and not there darkened. Cameroons and Ogowe.

*hobarti*. **C. hobarti** Btlr. is a species unknown to me, apparently nearly allied to *sangaris*. The ♂ is described as red above; costal and distal margins narrowly black; forewing with a small apical patch and a subapical dot black; the other subapical dots usually indistinct; hindwing with free submarginal dots, only at the costal margin and the anal angle with submarginal line; the under surface is yellowish brown with fleshy red and olive-coloured reflection and nearly straight dark brown median line. The ♀, whose identity with the ♂ is perhaps not quite certain, BUTLER describes as follows: „The female nearly resembles that sex of *C. adela*, excepting that the basal area is internally suffused with olivaceous greyish and externally with pale sandy yellowish, the discal series of sagittate markings is weaker in the primaries and very much more so in the secondaries; on the under surface the general appearance is even closer to that of *C. adela* ♀, but the central stripe is straighter and very dark, with the irregular series of spots which bound it internally white, the outer border (excepting at its extremities) sandy brown, and the discal markings very indistinct. Expanse of wings 64 millim.“ Uganda, in Nandiland.

## 2. Genus: **Euptera** Stgr.

The species of *Euptera* are small, delicate Nymphalids, which are rare in collections and but little known. In the ♂♂ the forewing is short, triangular and at the distal margin deeply emarginate; the hindwing on the other hand is produced at the anal angle, broadly and obtusely lobed. In the ♀♀ the forewing is broader and more rounded and at the distal margin not or only slightly emarginate; the hindwing is uniformly rounded, hence entirely without anal lobes. Life-history and early stages entirely unknown.

### FIRST GROUP.

Hindwing above with two light transverse bands, the first before, the second beyond the middle, the former connected with the half-band of the forewing, which consists of three or four spots (in 1 a to 3).

*elabontas*. **E. elabontas** Hew. (50 d). Both wings are black above with light, yellowish or white, markings; the forewing has the following: a longitudinal streak, two dots and a transverse streak in the cell; a transverse streak or a transverse spot in the basal part of cellule 1 a, cellule 2 and cellule 4; a transverse band about 4 mm. in breadth in cellules 1 a to 3 and a fine submarginal line composed of proximally concave lunules; the hindwing has two light transverse bands and a fine submarginal line, which is similar to that of the forewing; close before the distal margin there is further a fine, light, nearly straight line, which, however, is often indistinct. The light markings are in the ♂ more or less yellow, in the ♀ white or whitish; they are distinct also beneath. Slave Coast to the Congo. — **dorothea** Bak. is the north-western form and is said to differ in the much broader transverse band of the forewing, the streak-like mark „in“ the cell (probably beyond the cell in cellule 1 b) and the broader transverse bands of the hindwing. Sierra Leone. — **mweruensis** Neave differs from the typical form in the broader and more continuous transverse bands on both wings. The light markings of both wings are light sulphur-yellow in the ♂; the under surface is lighter than in the typical form; seems to me from the descriptions to be the same as *dorothea*. North Rhodesia.

*intricata*. **E. intricata** Auriv. is only known in the female; the markings are similar to those of the preceding species, but the ground-colour is lighter, black-grey, only in the basal part darker, blackish, and the light markings are rust-yellow in the basal part and in the distal half whitish bordered with yellowish; the inner transverse band on the hindwing is very narrow and the outer about 3 mm. in breadth; both wings have elongate, distally pointed, conical, black submarginal spots, surrounded by whitish, proximally yellowish rings; beneath both wings are light whitish with indistinct brownish markings in the basal part and conspicuous, rounded black submarginal spots; 4 or 5 fine black transverse lines in the cell of the hindwing. It is possible that this form is only a dimorphic ♀ of *elabontas*. Cameroons.

*sirene*. **E. sirene** Stgr. is about the same size as the preceding species and has the ground-colour of the upper surface deep black; the light markings of the forewing are sulphur-yellow but much smaller and narrower than in *elabontas* (50 d); the transverse band in cellules 1 a to 2 in particular is narrower, placed nearer to the distal margin, and composed of small triangular spots, which form sharp angles with one another; the transverse bands of the hindwing are quite different in colour and form; the inner one is red-brown, begins narrowly at vein 1 b and becomes rapidly broader towards the costal margin, where it unites with the outer band; the latter is almost triangular, begins at vein 1 b, where it is 8 mm. in breadth, but becomes gradually narrower anteriorly and in cellule 6, before it joins the other band, is only 2 mm. broad; in cellule 1 c it is entirely yellow,



but in cellules 2—4 proximally yellow and distally broadly red-brown and then unicolorous red-brown; the under surface of the forewing is for the most part black-grey, that of the hindwing darker and lighter brown. the light markings of the upper surface are scarcely indicated, but both wings have rounded dark submarginal dots. Gold Coast and on the Niger River; very rare. The ♀ is unknown to me.

### Second Group.

Hindwing above with only one light transverse band, which is 3—5 mm. in breadth, runs in or beyond the middle and is continuous with the light band of the forewing when this is present.

**E. pluto** Ward. In the ♂ the wings are black-brown above with a common light yellow transverse *pluto*. band, in the middle about 3 mm. in breadth, extending from vein 4 on the forewing to vein 1 b on the hindwing and on both wings much narrowed anteriorly, almost triangular; the cell and the base of cellules 1 b and 2 on the forewing have very fine, almost indistinct white transverse lines; the submarginal line consists of light lunules and stands out but little; on the under surface the median band is white and here also sharply defined. In the ♀ the transverse band is broader and on both surfaces pure white. Cameroons to the Kuilu River. — **kinugnana** Smith (50 d) appears to be the East African form of *pluto*; the ♂♂ only differ in having the median *kinugnana*. band of the upper surface on both wings but little narrowed anteriorly. Whether and how the ♀♀ differ from the West African ♀♀ I cannot decide in the absence of specimens of the latter. German and British East Africa;

**E. hirundo** Stgr. (50 d) is very similar above to the ♂ of the preceding species, but has more distinct *hirundo*. light markings at the base of the forewing, a still narrower half-band on the forewing, broken up into spots, and a median band on the hindwing produced into a long point towards the anal angle; the under surface is quite different, being clouded with dark brown and without light, sharply defined median band. The ♀ is unknown. Gaboon to Uganda.

**E. richelmanni** Weym. is only known in the female. This is, however, so different from all the des-*richelmanni*. cribed ♂♂ that it undoubtedly cannot belong to any of them. The wings are formed as in the other ♀♀ of the genus, the expanse only reaches 39 mm. The upperside of the forewing is almost unicolorous black-brown with three red-yellow spots in the cell; the first, close to the base, is small and triangular, the other two form short transverse streaks; the hindwing is black above with a reddish ochreous median band only 4—5 mm. in breadth, extending from the inner margin only as far as vein 5; the fringes of both wings are spotted with whitish between the veins. The wings are black-brown beneath with white spots at the base and broad ochre-yellow line before the distal margin, the middle of both wings is more or less relieved with grey-yellow and the hindwing has beyond the middle a curved row of large rounded black spots; the cell of the forewing with three deep black transverse spots separated by red-yellow streaks. Cameroons.

### Third Group.

Both wings above at the base unicolorous orange without markings to the middle or far beyond it.

[ **E. crowleyi** Kirby expands only 54 mm., but in the colouring of the upper surface recalls *Euphaedra crowleyi*. *eleus* (42 b) and the ♀ of *Cymothoë preussi*. Only the ♀ is known and this was first described as a *Euphaedra* and then as a *Cymothoë*, but is probably a true *Euptera*. The costal margin and the apical half of the forewing are black; the latter encloses 4 white spots in cellules 3—6, of which those in cellules 5 and 6 are placed nearer to the base. The hindwing has a black marginal band, only 4 mm. in breadth at the anal angle and gradually narrowed towards the costal margin, which in each cellule encloses a fine, semicircular white mark. The body is spotted with white. Dahomey.

## 3. Genus: **Pseudathyma** Stgr.

The species of this genus are very nearly allied to those of the preceding, only differing in the characters mentioned in the synopsis. The hindwing in the ♂♂ is not produced at the anal angle as in the *Euptera* ♂♂, but is rounded in both sexes. In colour, markings and shape the *Pseudathyma* species strongly recall those of *Neptis* and they have repeatedly been described as *Neptis* by authors who did not notice the neururation. Like many mimics they are very rare. Concerning their habits and early stages nothing has yet been published. Like the *Neptis* species they may be divided into two groups according to the markings in the cell of the forewing.

### First Group.

The cell of the forewing above unicolorous black without white markings. In all the species the hindwing has on the upperside a broad, continuous white median band, which is continued on the forewing as far as vein 2, and the forewing a white discal band, running from the costal margin in the direction of the hinder angle, and also reaching vein 2, but there placed much nearer to the distal margin than the white spots in cellules 1 a and 1 b. Before the distal margin of both wings run two fine white or whitish transverse lines and before the apex of the forewing there are usually in cellules 5—7 some



white postdiscal spots or streaks. Both wings have a postdiscal row (distinct at least beneath) of black or dark brown, conical or triangular spots.

- callina.* **Ps. callina** Sm. The white discal spots in cellules 2—6 of the forewing are all large and united into a continuous transverse band, basally emarginate in cellule 3; the spot in cellule 4 is the largest. Cameroons.
- sibyllina.* **Ps. sibyllina** Stgr. (49 e). The white transverse band of the forewing is entirely broken up into small free spots or, when continuous, deeply incised proximally in cellule 4; in this case the spot in 4 is the smallest and that in 3 the largest. Sierra Leone.
- plutonica.* **Ps. plutonica** Btlr. is smaller than the preceding, having an expanse of only 42 mm. It appears only to differ from them in having the white discal spots in cellules 2 and 3 of the forewing joined together and forming an almost triangular, free spot, while the spots in cellules 4—6 are small, separated and placed in a line which forms a distinct angle with those in cellules 2 and 3. Toro.

#### Second Group.

The cell of the forewing on both surfaces with a whitish longitudinal streak running along the hindmargin of the cell and distally widened and rounded. The other white markings as in the species of the preceding groups.

- neptidina.* **Ps. neptidina** Karsch. The discal band of the forewing is broken up into two broadly separated groups of spots, the anterior of which consists of the spots in cellules 4—6 and the posterior of those in cellules 2 and 3; the hindwing beneath with two white transverse bands at the base. Very nearly agrees in markings with *Neptis nicoteles* (48 e). Cameroons and Congo.

#### 4. Genus: **Euryphura** Stgr.

This genus closely approaches *Cymothoë* in many respects, but on the other hand also recalls many species of *Euryphene*. The systematic distinctions have already been given in the synopsis (p. 142 and 143). The sexes differ in shape and markings; in the ♂♂ the forewing is shorter and broader, the hindmargin being not or scarcely longer than the distal margin, and the hindwing at the anal angle distinctly and rather sharply produced; in the ♀♀ on the contrary the hindmargin of the forewing is considerably longer than the distal margin and the hindwing usually rounded at the anal angle. In both sexes the distal margin of the forewing is more or less emarginate in the middle. The earlier stages are unknown.

#### First Group.

Cell of the forewing above with two very large, quadrate spots, pure black or with somewhat lighter centres: one in the middle and one at the end of the cell.

- nobilis.* **E. nobilis** Stgr. (36 e). The distal margin of the forewing is deeply incurved behind vein 5; in the ♂ the hindwing is more obtusely and shortly produced at the anal angle than in the other species. Both wings are dark green above, the distal margins broadly darkened, almost black, proximally bordered by a black submarginal line; before this line is usually placed a postdiscal row of black spots; the forewing has in addition black spots at the base of cellules 1 b to 6; forewing beneath brown-grey, somewhat clouded and in the distal part lighter grey; hindwing beneath darker brown with some greenish spots at the base and in the middle and with light grey apical area. Sierra Leone.
- porphyron.* **E. porphyron** Ward (36 e) differs from the other species in having the hindwing produced into a point at the anal angle in the ♀ also. Both wings above and beneath with black submarginal line; forewing above black-grey, in cellules 1 a and 1 b red-brown or red-yellow as far as the submarginal line; cellules 2—7 with black discal longitudinal streaks, often dotted with white, and with curved black transverse streaks in the basal part; in the ♂ a rounded black spot in the middle of cellule 1 b. The hindwing is red-yellow with blackish marginal band and large black spots at the base. Ashanti to Cameroons. — From Togo SUFFERT describes *togoensis* as **togoensis** a form which is said to differ in the ♂ in the absence of the rounded black spot in cellule 1 b of the forewing and in the larger red-brown hindmarginal spot and in the ♀ in having the white spots of the forewing larger and the basal area of the hindwing darker.

#### Second Group.

The cell of the forewing above has instead of the black spots of the first group two irregular, hollow black rings. The species of this group are so nearly allied and so variable that I should not be surprised if it should turn out that they are all only forms of one species. As can best be seen from the figure of *achlys* (36 e), both wings have between the submarginal line and the cell three transverse rows of dark spots, some of which, however, may often be indistinct or joined together; between the connected black spots of the second and third row on the forewing there are usually small white dots in cellules 3—6; in the ♀♀ in addition large light spots are often present between the first and second transverse row.

- achlys.* **E. achlys** Hopff. (36 e). Both wings above with the ground-colour dark bluish green (♂) or glossy green; the forewing in the ♀ with small white spots in cellules 1 b—6 between the first and second transverse row; the black submarginal line composed of thick, nearly straight transverse streaks; under surface red-brown.



Portuguese, German and British East Africa. — **chalcis** *Fldr.* (36 d) seems to be the West African form and *chalcis*. differs chiefly in having the black submarginal line at least on the hindwing composed of bidentate, W-shaped transverse marks; in the ♂ the hindwing is dark brown above and only towards the anal angle more or less tinged with greenish; in the ♀ the ground-colour of both wings above is green and the forewing has the anterior part filled in with white in cellules 4—6 between the first and second transverse row of spots; the hindwing of the ♂ is much longer produced at the anal angle than in *achlys*. On the west coast of Africa to the Ubangi River.

**E. oliva** *Suff.* recalls *achlys* in the greenish ground-colour, but is most nearly allied to *aurantiaca*, which, *oliva*. however, is always dark without any greenish gloss; the ♂ is more slender, entirely greenish above, with the markings much as in *aurantiaca*, but very sharply expressed; row of white dots before the apex of the hindwing distinct; the ♀ above is likewise similar in markings to the last-named, but these are also very sharply expressed; the white median band of *aurantiaca* is only represented in the anterior part by light grey colouring; it is continued posteriorly in greenish to the inner margin of the hindwing; a greenish distal band is also present on both wings, if one may call it a band at all, as here only the dark markings are margined with greenish; the row of light dots not standing out distinctly, their colour being light grey instead of white; the spots beyond them are produced into longitudinal streaks. In the shape of the wings *oliva* recalls *plautilla* more than *aurantiaca*, especially in having the distal margin of the forewing more strongly excurved, but the hindwing is also similar to the former. Under surface of the ♂ bright ochre-yellow, of the ♀ very similar to that of *aurantiaca*, but more uniform (according to BARTEL). Togo and Cameroons. ♀-ab. **albula** *Suff.* only differs in having the white *albula*. discal band of the forewing continued to the hindmargin. Togo.

**E. ochracea** *Bartel* differs from all known species; it is nearest to *plautilla* (36 d), but the ♂ of that *ochracea*. species is always entirely dark on the upper surface, while *ochracea* ♂ is grey-brownish, mixed with ochreous, most strongly in the cell, which on the forewing is almost entirely filled up with ochreous, and in the middle, where an ochreous band is present, which on the forewing is indistinct, on the hindwing broad and sharply defined; the ♀, like that of *plautilla* ab. *claudianus*, is predominantly reddish brown on the upper surface, but differs from this in having the greater part of the forewing also brown; otherwise the markings are similar to the species named; in the ♂ the large blackish inner-marginal shade of the forewing of *plautilla* is not present; on the hindwing the blackish dentate stripe in the central part is much narrower and the blackish transverse shade following it is represented by a dentate stripe. In the ♀, as in some *plautilla* ♀♀, a rather broad whitish band is present in the distal part, consisting of single teeth and rays; the row of white dots follows beyond it: the black spots which it borders are strongly rounded; on the hindwing the black patches in the cell are sharply marked, while the median dentate stripe is dark brown and little prominent; the distal-marginal part of both wings is brownish grey in the ♀. The under surface of both wings in the ♀ is light yellow-brownish, very uniform, weakly marked with brown (not black); the row of dark spots in the distal part of the forewing is very indistinct and only faintly bordered with whitish; in the ♀ the under surface is similar to that of *plautilla*, but more uniform, more violet-brown, with weaker markings, the white markings on the forewing only reaching to the middle; hindwing very uniform violet-brown, not marked with white, but only faintly with dark brown and violet. Antenna above not black, but red-brown, as on the underside. Congo, at Mukenge.

**E. fulminea** *Bartel*. This species is unknown to me and only one ♀ is known, which is described by its *fulminea*. author as follows: „Like *aurantiaca* *Auriv.*, but the distal margin of the hindwing much more strongly outcurved, so that the apex projects much more strongly. In place of the white median band of that species there is only a faint light appearance; the black median (nebulous) stripe follows an entirely different course; it does not turn posteriorly straight towards the inner margin, but is closely approximated to the subdorsal, thus strongly turned towards the base; the distal dark macular stripe and also the row of white dots have a more undulate course. The hindwing is particularly characterized by three distal stripes, which in the posterior half of the wing have the spaces between them green; the outer of these stripes is also composed of much stronger teeth and curves than in *aurantiaca*. The under surface, too, is quite differently coloured, being predominantly brick-brown, tinged with violet in places; besides the characters already emphasized in the description of the upper surface the less extended light colouring at the apex of the forewing is at once noticeable, as also the red-brown (not ochreous) distal margin of this wing; all the markings are brown, not blackish; distal half of the hindwing almost entirely brown with whitish markings, similar to those of *aurantiaca*“. West Africa.

**E. aurantiaca** *Auriv.* is very nearly allied to the following species, only differing in the male in the *aurantiaca*. distal margin of the forewing projecting decidedly more at the extremity of vein 4, in the transverse rows of dark spots on the upper surface being lighter and not widened into large spots in cellules 1 a and 1 b on the forewing and the under surface much lighter and more uniform yellow. In the ♀ the wings have the ground-colour above dark grey-brown to the distal margin with the same transverse rows of dark spots as in the ♂; on the forewing there is a broad white band between the first and second row of spots, extending from the costal margin to vein 3 or 2; the under surface is light yellow as in the ♂. Congo.



*plautilla*. **E. plautilla** Hew. (36 d) is the longest known and commonest species of the genus. In the ♂ the wings are dark brown above with the usual black transverse rows distinct and at the hindmargin of the forewing in cellules 1 a and 1 b much widened; the submarginal line of the hindwing consists of bidentate, W-shaped transverse streaks; the ground-colour of the under surface is yellow-brown to dark brown. The ♀ is very variable; the form first described, which must therefore be regarded as typical, strongly recalls the ♀ of *porphyron*, but is much smaller and has the hindwing fully rounded at the anal angle; the forewing is more or less reddish at the middle of the hindmargin and has sometimes also white discal spots in cellules 2—6; the hindwing has a yellow to red-yellow discal band, 8—9 mm. in breadth, and is often also tinged with dark reddish in the basal part. Old Calabar to the Congo and Uganda. ab. **lisidora** Auriv. (= *aurimarginata* Suff.) differs in both sexes in having on the upperside of the hindwing a broad tan-yellow or light yellow marginal band, which usually reaches the third row of spots and thus encloses the submarginal line. The ♀♀ of this form are commoner than the ♂♂ and have the ground-colour above black-brown, with a light transverse band on the forewing, directed towards the anal angle and at the costal margin white, but posteriorly yellowish. Cameroons. In ab. *claudianus*. **claudianus** Druce the ♂ has the ground-colour of both wings brown to beyond the middle and in the ♀ the hindwing is almost entirely brown and the forewing at the hindmargin broadly brown. Niger, Cameroons. ♀-ab. *albofasciata*. **albofasciata** Stgr. is distinguished by both wings having a white or whitish transverse band beyond the middle; specimens with the white spots tinged with brown or greenish form a transition to the other forms. Cameroons.

### 5. Genus: **Euryphaedra** Stgr.

The distinctive characteristics of this genus are cited at p. 142 in the synopsis of the genera. The only species yet known is one of the rarest and most peculiar butterflies of Africa. The forewing is rather narrow and elongate, the hindwing on the contrary short and rounded and at the anal angle, between veins 1 b and 2, produced into a broad, obtuse lobe; the distal margin of the forewing, at least in the ♀, is nearly straight. The ♂ is unknown to me.

*thauma*. **E. thauma** Stgr. (50 a) is green above, with black markings; the forewing above with two black spots in the cell, a black ring at its extremity, an angled black spot at the base of each cellule from 1 a to 2, long, slightly curved streaks in cellules 3—6, a rounded submarginal spot in cellule 1 b and a narrow black marginal band; at the costal margin the ground-colour is distinctly darkened; the hindwing above has a rounded black spot at the apex of the cell and beyond the middle three transverse rows of black spots and a black marginal line. On the under surface the black markings are smaller and the hindwing has only two transverse rows of black spots, the first (proximal) being absent; the ground-colour is light ochre-yellow on the hindwing as far as the first row of spots and on the forewing at the hindmargin. In the interior of the Cameroons and French Congo.

### 6. Genus: **Harmilla** Auriv.

This genus also embraces only a single rare species, of which, however, both sexes are known. The sexes are similarly coloured and marked, but the ♂ is smaller than the ♀, has shorter and broader wings and in shape recalls the ♂♂ of the genus *Diestogyna*. The antenna is very long.

*elegans*. **H. elegans** Auriv. (45 d). Both wings above dark green in the basal part; the forewing then with an orange transverse band, placed vertically towards the costal margin, reaching vein 2 and then continued as a narrow transverse line to the hindmargin; this transverse band is twice as narrow in the ♂ as in the ♀; close before the apex is placed in the black apical area a large white spot; the hindwing has beyond the apex of the cell a broad, light bluish green transverse band and is blackish at the distal margin. Beneath both wings are dark ochre-yellow or brownish yellow, with a large black spot in the cell; beyond the middle is placed a curved row of rounded spots, some of which are black bordered with white, others only white; in cellules 1 c—3 of the hindwing a thick black submarginal line, which is bordered with grey or whitish. This beautiful and very distinctively marked species has hitherto only been met with on the coast of the Cameroons.

### 7. Genus: **Crenidomimas** Karsch.

The only species of this genus is superficially so like some species of *Crenis* that it was formerly regarded as a true *Crenis*, and was even placed by BUTLER with *Crenis rosae* (49 a) and *benguclae* (49 b) in a separate but quite artificial genus — *Metacrenis*. The nervation shows in this, as in other cases, where the true relatives of the genus are to be sought and to Professor F. KARSCH belongs the honour of having first pointed this out. The early stages are unfortunately unknown. The wings have the margins almost entire, the distal margin only weakly emarginate and the hindwing fully rounded at the anal angle.



**C. concordia** Hopff. (46 f.). Both wings above light bluish grey with violet tinge and black markings; *concordia*. the forewing with black transverse lines in the cell and at its apex and with three transverse rows of black spots, of which the first is absent or only weakly developed in cellules 1 a and 1 b; the hindwing has also behind the cell three rows of black spots, of which, however, the first is sometimes absent or only indicated. On the under surface both wings have the ground-colour yellow, a postdiscal row of rounded black spots and a row of black submarginal streaks; the cell of the forewing is without markings, but that of the hindwing has 3 or 4 black transverse streaks; for the rest the hindwing is more or less blue-grey in the middle and has blue-grey stripes between the postdiscal spots and the marginal streaks. Angola, Zanzibar, Nyassaland and German East Africa.

### 8. Genus: **Diestogyna** Karsch.

The numerous species of this genus are still very imperfectly known, but are among the most interesting of the Ethiopian Nymphalids. The sexes are quite dissimilar and hence their identity is still uncertain in some cases. On account of the often indistinct and confused markings the species are difficult to describe and the dark iridescent colours also cannot be quite faithfully reproduced in figures. In this comprehensive work it has been possible to me, through the kind cooperation of the publishers, to have nearly all the known species figured in both sexes. By this means it is hoped that the determination of the species will be much facilitated.

In the ♂♂ the wings are short and broad; the forewing has the costal margin convex and the distal margin straight or rarely somewhat excised and still more rarely convex. The anal angle of the hindwing is often somewhat produced or elongated, but may also be quite rounded; in this case the distal margin is often almost entirely straight between veins 2 and 6. The markings of the upper surface are really the same in all the species, but are often indistinct or run together. There occur, as is best shown in the figure of *nigropunctata* (38 b), on the forewing two black rings in the cell and one at its apex, and five blackish transverse bands or rows of spots, vertical to the hindmargin, of which the first is only present between the hindmargin and the base of cellule 2, and is often united with the second band; the fifth band corresponds to the submarginal line; at the distal side of the third band are often placed small white dots in cellules 4—7. On the hindwing the basal part is darkened and behind the cell are placed three dark transverse bands, corresponding to the three distal transverse bands of the forewing. On the under surface there is on both wings, or at least on the hindwing, a distinct basal area, sharply defined distally, the size and shape of which is of the greatest importance as a means of distinguishing the species.

The ♀♀ are always larger than the ♂♂ and have the forewing more elongate, with the apex sharper and the costal margin less convex; the hindwing is nearly always rounded at the anal angle. In some species the same dark transverse bands are present above as in the ♂♂, but in the majority these are indistinct and the forewing has a light oblique transverse band; the hindwing and the basal part of the forewing are often light coloured or the hindwing has a light median band; the basal area on the underside of the hindwing usually agrees exactly in shape with that of the ♂, and it is often by this alone that it is possible to come to a decision as to the identity of the sexes; the dark transverse rows of the upperside of the hindwing are in the ♀♀ often modified on the underside into a curved row of large dark rings or elongate eye-spots. The antenna is very long in both sexes and in the ♂ especially reaches far beyond the apex of the cell. All the species are peculiar to the great forest tracts and are distributed from Sierra Leone to Uganda and Kavirondo, but are entirely absent in South and East Africa and on Madagascar. Unfortunately their earlier stages are entirely unknown.

The numerous species can be divided into two natural and easily distinguished groups according to the shape of the basal area on the underside of the hindwing.

#### First Group.

The basal area on the under surface of the hindwing is triangular, distally bounded by a straight or nearly straight line, which extends from the costal to the inner margin or at least to vein 1 b and is there sometimes angled. The ♀♀ have almost all a *Catuna*-like pattern.

**D. camarensis** Ward (39 d). In the ♂ both wings above have a bright greenish blue reflection as far *camarensis*. as the broad black discal band; the cell of the forewing, however, with the usual black transverse markings; distally to the black discal band follows a blue transverse band and before the distal margin the forewing has one blue transverse line and the hindwing two; the distal margin of the forewing is nearly straight and the hindwing is a little prolonged at the anal angle. The under surface of both wings is bright orange or somewhat brownish yellow, not darker in the basal part; the forewing has in the middle two brown transverse lines, which are approximated towards the hindmargin and terminate at vein 1; close beyond the distal line is placed a weakly curved transverse row of 5 or 6 rounded black spots; the basal area of the hindwing is unicolorous with a black dot in the cell and is distally bounded by a thick transverse line, nearly straight between the costal margin and vein 1 b; in the distal half there are only some indistinct brown dots. The ♀ is larger than the ♂, having an expanse of 55—60 mm.; the under surface is light yellow, but marked quite as in the ♂; the upper surface strongly recalls that of *goniogramma* ♀, but has the dark transverse bands of the forewing broader and more continuous, the yellow median band of the hindwing broader and more triangular, and quadrate



black submarginal spots on the hindwing, distally not or scarcely light bordered. Cameroons to the Congo.

*mundula.*

**D. mundula** Grünb. is a recently described species, unknown to me, but said to be nearly allied to *camarensis* and described as follows: ♂. Shape of the wings as in *goniogramma*; the hindwing at the anal angle less pointed than in *camarensis*, more broadly rounded, hence with the blue and black-brown stripes less upright, more horizontal; otherwise the markings of the upper surface agree with those of *camarensis*, the discal band (= distal boundary of the basal area) on the hindwing bent in an acute angle below vein 1 b and basally extending to the inner margin, while in *camarensis* it is either entirely absent or only indicated. ♀: on the upper surface only distinguishable from *camarensis* by the yellow discal band of the hindwing, which is narrower (at the broadest part, at vein 6, only 4.5 mm. in breadth) and directed somewhat more steeply towards the distal part of the inner margin, so that the dark stripe of the ground-colour between the distal edge of the band and the yellow submarginal line is not materially widened towards the inner margin; moreover the sections of the submarginal band between the veins are more strongly angled than in *camarensis*; under surface somewhat duller grey-yellow, with the markings somewhat weaker, otherwise as in *camarensis*, except that in the ♂ the bend in the discal band of the hindwing to the inner margin is more decided. Cameroons and Spanish Guinea.

*goniogramma.*

**D. goniogramma** Karsch (39 d) is the smallest species of *Diestogyna* and differs in shape from all the others in having the distal margin of the forewing in both sexes weakly rounded. In the ♂ the black transverse bands of the upper surface are distinct, sharply defined and separated by blue or violet lines, the fourth transverse band is broken up into rounded, black, blue-ringed spots, before the apex of the forewing there are often (not always) three small white subapical dots in cellules 4—6; the under surface differs considerably from that of *camarensis*, the ground-colour being tawny and the basal area of both wings distinct on account of its somewhat darker colour; the basal area of the forewing extends to beyond the middle of the wing and is distally bounded by a brown transverse line, obtusely angled at vein 4; the basal area of the hindwing is relieved with grey in the middle, with a black dot in the cell, and is distally bounded by a straight dark brown line, basally broadly margined with whitish grey; the large submarginal eye-spots in the distal half are rather indistinct, only the white dots at their proximal side standing out sharply. The ♀ differs above from the ♂ in having the blue transverse lines replaced by yellow and especially in having the transverse line between the second and third black band on the hindwing developed into a broad yellow median band, which is widened anteriorly; the under surface is much lighter than in the ♂, but otherwise quite similarly marked. Cameroons and northern part of the Congo region.

*ribensis.*

**D. ribensis** Ward (= *acutangula* Auriv. 39 c) was described from a specimen said to come from Ribé in East Africa and afterwards identified in all collections with a nearly allied species from the Cameroons. Hence I was misled into redescribing the species. But a comparison of *acutangula* Auriv. with the figure of *ribensis* in Ward's very rare work „African Lepidoptera“ has convinced me that both belong to the same species and that consequently the following, hitherto regarded as *ribensis*, is another, unnamed species. The ♂ has distinct black transverse bands above, separated by light lines with a violet reflection; the broad, second dark transverse band of the forewing projects sharply distad at vein 4, forming a right angle or an acute angle, which is especially distinct on the under surface; the under surface is dark brown, the basal areas relieved with whitish grey in the middle; the basal area of the hindwing is distally bounded by a dark line, irregularly and feebly curved, its general course nearly straight. The ♀ recalls those of the preceding species above, but differs in having the second yellow transverse band rather strongly widened not only on the hindwing but also in cellules 1 a—2 of the forewing; on the hindwing, however, it is still not so wide as in *camarensis*, but measures here only about 5 mm.; in cellule 1 b of the forewing it has a breadth of 2.5 mm.; on the under surface this band is also well expressed, but is lighter, whitish yellow, and indistinctly defined distally; the dark basal area consequently stands out much more sharply in the ♀ than in the ♂. British East Africa: „Ribé“ and Uganda. The species has not to my knowledge been found again in the coast regions of East Africa, and hence it seems somewhat doubtful whether it really occurs there.

*obtusangula.*

**D. obtusangula** spec. nov. (= *ribensis* 39 d) is very similar to the preceding species, but differs in both sexes in having the second dark transverse band of the hindwing at vein 4 distally rounded or only very obtusely angled. In the ♂ the light transverse lines of the upper surface are thick and bright blue and the basal area on the underside of the hindwing is distally margined with violet-grey; the forewing beneath is somewhat tinged with yellowish at the hindmargin and the blue transverse markings on the upperside of both wings are represented by violet-grey transverse lines or shades. Cameroons.

*butleri.*

**D. butleri** Auriv. (= *amaranta* Btlr. ♀) is only known in the female. It very nearly approaches the ♀ of *ribensis*, but has much narrower yellow transverse lines on the upper surface; the first of these is absent or very indistinct; thus the basal half of both wings has become almost unicolorous dark brown, some light transverse lines being present only in the cell of the forewing; distally the basal half is bounded by a sharply defined, continuous, feebly curved transverse band, extending from vein 7 of the forewing to



vein 1b of the hindwing and in cellule 2 of the forewing suddenly widened to a breadth of 4 mm., but otherwise only 1—2 mm. in breadth; beyond the middle there are on the forewing 2 and on the hindwing 3 yellow transverse lines; the under surface is similar to that of the ♀♀ of *ribensis* and *obtusangula* and the basal area of the forewing is distally rounded at vein 4 as in the latter species. Toro.

**D. luteostriata** Baker (39 e) is likewise only known in the female. It approximates in markings to the preceding species, but differs very considerably in that the first yellow transverse line on the upper surface is broad and sharply expressed and the second forms two large yellow spots on the forewing, one placed in cellule 1b and almost quadrate, the other in cellule 2 very long, extending to the yellow submarginal line; the broad black discal band is almost entirely interrupted by the first spot and the outer transverse band by the second; both wings beyond the middle only with two yellow transverse lines; the under surface is light brownish with a dark dot in the cell of the hindwing; the basal area of the forewing is feebly curved distad between the costal margin and vein 2, in cellule 1b deeply incised; the basal area of the hindwing is large, distally quite straight and margined with whitish; the postdiscal oval spots are large, white-ringed, distinct and complete, only the one in cellule 2 of the forewing is incomplete (proximally obliterated by the yellow spot). Congo region: Beni-Mawambe. *luteostriata*.

The two following species differ somewhat from the preceding ones of this group in the form of the basal area on the underside of the hindwing; this area is somewhat longer at the costal and somewhat shorter at the inner margin, so that its distal boundary-line becomes more oblique. In the ♂♂ the markings on the upper surface are less distinct and in the only known ♀ they differ very much from those of the preceding species, more approaching the pattern of many ♀♀ of the second group. The hindwing in both sexes is distinctly, but broadly and obtusely produced at the anal angle.

**D. dusei** Auriv. (39 f). ♂: both wings above dark grey-brown with dull bluish reflections, which are especially manifest in the distal part of the forewing and along the middle of the hindwing; the dark transverse bands, with the exception of the discal band on the forewing, are scarcely indicated; in the cell of the forewing the usual light transverse bands are rather distinct. The basal area of the forewing beneath is distally pretty uniformly curved, at veins 2 and 3 shortly dentate and margined with light yellowish; the basal area of the hindwing is dark chestnut-brown, distally almost straight but somewhat irregularly defined and especially towards the inner margin bordered with grey-violet; the postdiscal ring-spots are indistinct, but proximally marked by white dots; these dots are also present in cellules 3—7 on the forewing; the basal area of the hindwing nearly reaches the white dot in cellule 7. The ♀ is much larger than the ♂ and one of the largest *Diestogyna* ♀♀ known. Only one specimen (from STAUDINGER's collection) is known to me, and this is unfortunately damaged on both the forewings. The wings have the ground-colour above dark grey-brown, in the basal part darker and more reddish brown; the forewing has two large, obliquely placed yellow spots in cellules 2 and 3, which apparently correspond to a part of the oblique transverse band in the ♀♀ of the second group, and 4 white subapical dots; the cell with the usual curved transverse lines in the middle and at the apex; hindwing above with a broad yellow median band between veins 1b and 7, not sharply defined distally and in cellules 4—6 so much widened that it reaches the distal boundary of the eye-spots; the under surface marked almost as the upper, but the spots in cellules 2 and 3 of the forewing nearly white and the basal area of the hindwing ornamented with some violet-grey nebulous lines and distally bounded by a white median band about 2 mm. in breadth. A very rare species, hitherto only known from the Cameroons. *dusei*.

**D. romi** Auriv. (39 f). Of this fine species only the ♂ is known. The wings above with a beautiful blue reflection, without dark transverse bands, in the cell of the forewing black with blue transverse lines and at the distal margin black; fringes snow-white; on the under surface the basal area is deep black-brown, distally bordered with violet-grey; its edge on the forewing is somewhat irregular, but towards the hindmargin almost vertical, on the hindwing almost straight; the eye-spots are only indicated by white dots; the distal part is dark reddish brown, at the anal angle of the hindwing suffused with violet-grey. Congo region between Kasongo and the Stanley Falls. *romi*.

### Second Group.

The basal area on the underside of the hindwing is rounded or quadrate, the line which bounds it distally being curved or usually angled at vein 3 or 4. A division of this extensive group into subgroups according to the markings of the ♀♀ is here provisionally attempted, but is defective inasmuch as the ♀♀ of several species are still unknown or their identity with the ♂♂ is not altogether beyond doubt.

#### First Subgroup.

Apex of the forewing in the ♀ not white. Forewing above and beneath in the ♀♀ with a light, obliquely placed transverse band, which arises from the middle of the costal margin, is directed towards the hinder angle or the distal margin and usually reaches vein 2; this oblique band consequently consists as a rule of 5 spots, one in each cellule from 2—6; the spots in cellules 4—6, however, are often small or indistinct and the one in cellule 2 is sometimes separated from the rest or forms an angle with them. By this peculiar transverse band, which is entirely absent in the ♂♂, the ♀♀ of this subgroup are easy to recognize. The ♂♂ above with black-brown ground-colour and black transverse bands or unicolorous black with or without blue markings and blue reflection, but never with red-brown or yellow-brown ground-colour or transverse bands.



*groesmithi*.

**D. groesmithi** *Stgr.* (39 c) differs from all other species in the beautifully marked under surface: ground-colour on both wings deep red-brown, in the ♀ somewhat lighter, changing into yellow-brown at the inner margin of the forewing; the oval postdiscal spots are ringed with blackish grey and in cellules 4—6 proximally bordered by sharply marked white dots; the cell of the forewing has 2 or 3 grey transverse streaks (filled in with brown) and beyond the apex of the cell is placed a broad grey spot; the hindwing has a white-grey longitudinal stripe, more or less interrupted by dark transverse streaks, extending from the base through the cell and cellule 6 to the apex and enclosing a black dot in the cell; the species may be known at once by this stripe; the basal area of the hindwing is distally bounded by an irregularly curved and somewhat dentate brown line, which is not very distinct but usually margined with grey. Above the wings are black-brown in the ♂ with dark blue reflection but without dark transverse bands; the forewing has a white dot at the middle of the costal margin and four very distinct white subapical dots; in the ♀ the ground-colour of the upper surface is tawny, in the apical part of the forewing somewhat darker, hence the dark transverse markings stand out rather distinctly; the transverse band of the forewing is continuous, posteriorly somewhat broader, anteriorly light yellow, posteriorly white; the white subapical dots are distinct. Cameroons.

*aridatha*.

**D. aridatha** *Hew.* (39 c) is best distinguished by the unusual shape of the basal area on the hindwing beneath; this is small and anteriorly to posteriorly very short, as its posterior side runs from the base of vein 3 in a nearly straight line and parallel with the costal margin towards the inner margin; hence the entire area is almost quadrate. In the ♂ the wings are black-brown above with a slight blue reflection; the hindwing is lighter towards the costal margin, hence the postdiscal spots are here visible; the forewing is also somewhat lighter at the costal margin, so that the dark transverse bands and transverse spots become visible; it has 2—4 white subapical dots; beneath the forewing is yellowish with 5 or 6 red-brown transverse bands at the costal margin, which become indistinct posteriorly; the basal area of the hindwing is deep chestnut-brown with yellowish spots in 6—8 and a brown dot ringed with black and yellow in the cell; on the posterior side it is broadly margined with whitish grey; the rest of the hindwing is red-brown, at the anal angle very broadly suffused with whitish grey, a blackish dot in the basal part of cellules 4 and 5 adjoins the distal side of the basal area. The ♀ very closely approaches the ♂ beneath, but is lighter and has on the hindwing white instead of yellow spots in the basal area and distinct postdiscal spots; the transverse band of the forewing is yellow above, white beneath, continuous, but in cellule 2 somewhat narrower than in cellule 3. Old Calabar and Cameroons.

*abasa*.

**D. abasa** *Hew.* (39 b). In the ♂ the wings are black-brown above, with very distinct black transverse bands but almost entirely without blue reflection; the fringes are dark and the white subapical dots of the forewing are indistinct or absent; the under surface recalls the preceding species, but is somewhat lighter and has the basal area of the hindwing of a different shape, more rounded; forewing beneath yellow with two red-brown, dark-bordered transverse spots in the cell, a brown, nebulous band beyond the middle, widened at the costal margin, a nearly straight row of dark brown eye-spots and a dark marginal band; the basal area of the hindwing is reddish brown, scarcely darker than the distal part, and marked with some yellow spots, of which the one in the cell encloses a black dot; the distal part is darkened in cellule 4 close to the basal area, in cellules 5—7 tinged with yellow, but otherwise dark brown, towards the inner margin somewhat suffused with violet and only close to the anal angle and at the inner margin sprinkled with grey; the eye-spots are indicated by their distal and proximal yellow bordering. The ♀ strongly recalls that of *aridatha* above and has like this a yellow transverse band on the forewing, posteriorly somewhat narrowed, but quite straight; this band is yellow on the under surface also, although somewhat lighter than above; the under surface is dark tawny but thickly overlaid with grey almost throughout, only the apical part of the forewing and a broad marginal band between vein 3 and the apex of the hindwing pure brown; the basal area of the hindwing is distinctly longer than broad and almost unicolorous dark with no whitish grey spots or with these indistinct. This and the two preceding species are the only forms of this subgroup known to me in which the ♀♀ have a yellow transverse band on the upperside of the forewing. Old Calabar, Cameroons and Congo.

*atrovirens*.

**D. atrovirens** *Mab.* (39 a, b). The ♂ is one of the darkest forms in the genus; both wings above blackish with dark bluish gloss and without markings, the hindwing, however, lighter at the costal margin, dark brown, with indications of the black transverse bands; beneath both wings are dark umber-brown, the forewing somewhat lighter at the hindmargin; the cell of the forewing has before the middle a ring-spot margined with grey and dark brown, anteriorly open, and at the apex two grey transverse lines, the basal area is bounded between the costal margin and vein 2 by a slightly curved line, which is somewhat dentate at the veins and distally faintly margined with grey; the apex is sprinkled with violet-grey scales in cellules 6—8; the postdiscal rings are very indistinct and the white dots at their proximal ends also scarcely noticeable; the basal area of the hindwing is little darker than the ground-colour, distally rounded and limited by a dentate line; this line is not margined with light or only very indistinctly and is not accompanied by a dark spot in cellule 4; in the basal area there are usually two yellow-grey or violet-grey spots, one in cellule 2, the other in 7, and a ring of the same colour in the cell; the postdiscal spots are indicated by light dots at their proximal ends and by scarcely visible grey rings; at the anal angle cellules 1 b—2 are sprinkled with violet-grey scales for a breadth



of only 2—4 mm.; the fringes of both wings are dark. In the ♀ the hindwing and the basal part of the forewing are dark yellow-brown above and the apical part of the forewing nearly black with white transverse band and 4 white subapical dots; the white transverse band runs in the direction of the posterior part of the distal margin, from the costal margin to vein 3 continuous and of almost uniform breadth, then with an irregular, almost free spot in cellule 2; cell yellow-brown with distinct black transverse markings; the postdiscal spots of the hindwing are filled in with black and distally sharply bounded by a lunulate black line; beneath the forewing is dark umber-brown, suffused with grey in the cell and only yellow at the base of cellules 1a and 1b, the white markings as above; the greater part of the hindwing beneath is suffused with grey, the basal area dark brown, beyond the middle in cellules 1b, 1c, 2, 5 and at the apex of the cell broadly tinged with yellowish, distally dentate and margined with very dark grey, in the base of cellule 4 a blackish spot; the inner margin and the anal area are very broadly suffused with whitish grey; the postdiscal spots are black-grey and distally next to the lunulate line yellowish; outside the lunulate line the marginal band is first yellowish, then dark red-brown. Cameroons, Gaboon and Landana.

**D. conjungens** *Auriv.* (38 f) is only known in the male. In many respects this is intermediate between *conjungens*. *atrovirens* and *atropurpurea*. Above the wings are coloured and marked quite as in *atropurpurea*, dark black-brown with blue-greenish reflection and two rows of indistinct black spots before the distal margin; in the cell there are two indistinct oval blackish transverse spots and a spot beyond the end of the cell; the fringes of the forewing are white, but those of the hindwing almost entirely dark. The under surface of both wings agrees very nearly with that of the ♂ of *atrovirens*; the forewing is black-brown, at the hindmargin broadly shaded with yellowish grey and between the cell and the apex more or less sprinkled with violet-grey scales; the white subapical dots, which are indistinct or absent above, are here more distinct; the hindwing is rather uniform black-brown, only at the anal angle more or less suffused with violet-grey; hence the basal area is ill-defined, it is bounded by small grey spots in cellules 1c, 2, 3, 5 and 6 and encloses 3 or 4 yellowish grey basal spots in cellules 1a—1e and 7, of which the last is the largest; the oval postdiscal spots are indistinct and characterized by a white dot at the proximal end of each. North-West Cameroons, discovered by A. SCHULTZE.

**D. atropurpurea** *Auriv.* (39 a) is in both sexes very similar to *D. atrovirens* above, but differs quite considerably beneath. The ♂ differs on the upperside in the distinct white subapical dots and white fringes of the forewing and in two rather distinct rows of spots before the distal margin on both wings; beneath the forewing is broadly yellowish dark grey at the hindmargin to vein 3, otherwise in the basal area dark brown and in the apical part reddish brown with violet-grey scales before the apex; the underside of the hindwing is variegated in colouring, the ground-colour dark purple-reddish, the basal area black-brown, reddish at the costal margin, and with a large light yellow spot at the base of cellule 7; beyond the basal area the ground-colour is brown-red and then before the postdiscal spots again black-brown, this black-brown discal band is in cellule 4 connected with the basal area by a dark transverse streak; the postdiscal spots are again brown-red with white dots at their proximal ends and indistinct yellow spots at the distal side; the marginal band is darker brown-red. The ♀ only differs above from that of *atrovirens* in having the basal part of the forewing somewhat darker and the white transverse band directed more towards the hinder angle; beneath the ground-colour of the forewing is more uniform dark grey and the hindwing, which in markings resembles that of the ♂ but is much lighter, is only somewhat suffused with grey at the anal angle (very narrowly) and in the basal part of the costal margin, but in all the light parts distinctly striated or irrorated with brown, which does not occur in the ♀ of *atrovirens*. Cameroons.

**D. obsoleta** *Grünb.* (39a). In the ♂ the wings are dark brown above with rather indistinct black markings, the posterior part of both wings predominantly black with slight dark blue gloss; fringes of the forewing white, of the hindwing dark brown. Under surface of the forewing yellowish brown with dark brown markings, particularly in the basal half; the dark transverse streaks in the cell broad, edged with blackish; beyond the cell a broad light brown, dark-variegated median band, anteriorly much widened and occupying nearly half the costal margin from the apex onwards; its distal boundary is formed by a submarginal band composed of confluent dark brown spots, and accompanied again distally by a curved black line; distal margin dark brown; hindwing dark red-brown with irregular light grey-brown markings; above the cell a basal spot, in the cell itself an isolated dark brown, light-edged spot, behind the cell below vein 2 likewise a larger light spot; beyond the cell are distinguishable of the quite irregular markings only a median row of dark brown spots and a submarginal dentate band, both rather indistinct. The ♀ is unknown; but if the ♀ figured 38 f as *amaranta* ♀ belongs to *obsoleta*, not *amaranta*, as is possible, the species should be placed in the third subgroup. Uganda.

**D. mawamba** *Baker* (38 e), as the figure shows, is near to *D. atropurpurea*. In the ♂ the wings are black-brown above, with dark blue reflection, black transverse bands, which are distinguishable also in the middle of the forewing, and whitish fringes on the forewing; on the under surface the basal area of the forewing is black-grey, its demarcation from the lighter grey distal half sharply defined and arcuate as far as vein 1, the indistinct postdiscal spots are distally bounded by a dark lunulate line; outside this line the distal margin



is ferruginous; this colour extends far into cellules 3—5; the basal area of the hindwing is dark rust-brown with a yellow spot at the base of cellule 7 and in the cell; the distal half is reddish yellow next to the basal area and without dark spot in cellule 4, but then for the most part suffused with rust-brown and reddish brown; the postdiscal spots are bordered with blackish, filled up with grey and rust-brown. The ♀ scarcely differs from that of *D. atrovirens* above; the white transverse band of the forewing, however, is much narrowed at the costal margin; the under surface of the forewing is entirely uniform dark brown-grey with the same markings as above; the basal area of the hindwing is almost entirely black-brown and connected by a narrow stripe at the costal margin with the distal margin, which is likewise much darkened between the apex and vein 4; all the rest of the wing is light yellowish, thinly irrorated with brown, with long but indistinct postdiscal spots and entirely without dark spot in cellule 4. Congo: Mawamba-Makala.

*simplex.*

**D. simplex** Stgr. (38 e, f). In the ♂ both wings are unicolorous dark brown above with blue reflection, only before the distal margin the two outermost rows of spots stand out rather distinctly; the fringes of the forewing are dark; beneath cellules 1a—2 of the forewing are grey; both wings otherwise uniform red-brown with very indistinct markings; the basal area of the hindwing is scarcely darker than the ground-colour, entirely unspotted, but with a black dot in the cell and distally bounded by a fine blackish, curved and somewhat undulate line; close to this line is placed in cellule 4 an indistinctly defined black nebulous spot; at the anal angle the ground-colour is very faintly tinged with grey; the white subapical spots of the forewing are completely absent on both surfaces. The ♀ has the forewing black-grey above, at the apex somewhat darker, blackish, with straight, continuous white transverse band and white subapical dots; the hindwing is grey-brown above, tinged with yellowish at the costal margin and in the postdiscal spots; the under surface as in the ♂, but much lighter, uniform light brown-yellow, and with very distinct black spot in the basal part of cellule 4 on the hindwing; the boundary-line of the basal area sharply angled at vein 2. Sierra-Leone.

*feronia.*

**D. feronia** Stgr. (38d, e) is so similar to the preceding species that it is sufficient to mention the differences: in the ♂ the wings are tinged with very dull and dark bluish above and the hindwing from the costal margin to the fold of cellule 4 dark brown without blue gloss; the forewing has white fringes and white submarginal dots; on the under surface the forewing is alternately banded with yellowish and red-brown and is only grey in cellule 1b. Both sexes differ in having the basal area on the underside of the hindwing posteriorly cut off straight between vein 4 and the inner margin, and broadly margined with violet-grey; the blackish spot in cellule 4 (and 5) stands out sharply. Sierra Leone.

*albopunctata.*

**D. albopunctata** Auriv. (38 d). The wings in the ♂ are blackish above with blue reflection but without distinct black transverse markings and without white subapical dots; the fringes are dark, but have on the forewing small white and on the hindwing yellowish dots at the extremities of the interneural folds; beneath both wings are very dark grey-brown, the forewing with grey transverse lines in the cell and the basal area margined with grey and angled at vein 4; the postdiscal eye-spots are very distinct and have small white dots, cellules 6—8 are grey-scaled at the apex; the basal area of the hindwing is much longer than broad, somewhat darker than the ground-colour, and encloses only a dark dot in the cell; the anal area is mixed with grey and the eye-spots white-pupilled. Umangi and Banana, Congo region. The ♀ figured probably belongs to this species, but was not found together with the ♂♂.

*umbrina.*

**D. umbrina** Auriv. (38 d) is only known in the male and approximates to the preceding species. It differs in having the dark transverse bands of the upper surface weakly indicated, the fringes uniformly dark, the basal area on the underside of the forewing differently shaped, projecting in a tooth at vein 2, the eye-spots of both wings indistinct, scarcely more than indicated by the white dots, and the basal area of the hindwing more distinctly margined with grey. Congo region, at the Ikelemba River.

*veronica.*

**D. veronica** Cr. (38 b ?) \*) was described and figured by CRAMER as long ago as 1780 and is consequently the oldest known *Diestogyna*. The ♂ is rather light greenish blue above in any light, only a marginal band, which on the forewing is 2 mm. in breadth, but on the hindwing scarcely 1 mm., is black; the fringes are distinctly spotted with white; the dark transverse markings in the cell of the forewing stand out distinctly and the black transverse bands are also more or less indicated, the outer band of the hindwing in particular is distinct, also the white subapical dots of the forewing; the ground-colour of the under surface is fairly uniform dark brown, the rounded basal area of the hindwing, however, decidedly darker than the distal half; the basal area of the forewing is distally weakly curved and margined with whitish grey; the postdiscal spots are distinct and ringed with grey; the apex is slightly grey-scaled in cellules 7 and 8; on the hindwing a blackish spot is placed in cellules 4 and 5 close to the distal side of the basal area; the anal part is faintly tinged with grey as far as the basal area; in the basal area there is some small violet-grey clouding; in the white-spotted fringes and the stronger, more extended and continuous blue colour of the upper surface the ♂ differs at once from the ♂♂ of the following nearly allied species. The ♀ has the upper surface rather uniform grey-brown with continuous

\* The figures here given, from specimens in the Berl. Mus., have not come out successfully; possibly they even belong to one of the following species.



white transverse band on the forewing; the under surface recalls that of the ♂, but is lighter and has the basal area of the hindwing more quadrate and margined with whitish grey. Sierra Leone to Ashanti.

**D. barombina** *Auriv.* (38 c). In the ♂ the black transverse markings of the upper surface stand out *barombina*, distinctly and the dark blue colour is only present as transverse lines between the black bands; the fringes are unicolorous dark brown, or only on the forewing with some indistinct light dots; the under surface is coloured and marked almost exactly as in *veronica*, only a little lighter and with a small, not very distinct black dot in the cell of the hindwing; this dot is entirely absent in *veronica*, but in the two following species is large and very distinct. The ♀ above is brown-yellow on the hindwing and at the base of the forewing and the forewing has a white transverse band with the spot in cellule 2 almost free; the under surface is rather dark brown and the basal area of the hindwing much darker than the distal half, the latter being suffused with grey; the dark spot in the basal part of cellules 4 and 5 stands out sharply; the cell, however, has only an indistinct dark ring instead of the black dot. Cameroons.

**D. incerta** *spec. nov.* (38 c). The upper surface of the ♂ agrees exactly with that of the ♂♂ of *barombina* *incerta*, and *tadema*, but the under surface is bright and almost uniform ferruginous, only at the distal side of the basal area somewhat relieved with yellowish; the basal area of the forewing is very large, extending somewhat beyond the middle of the wing and with its distal boundary curved; the basal area of the hindwing is but little darker than the marginal half, distally bounded by a black-brown dentate line and ornamented in the cell with a distinct, light-edged, black dot; the blackish spot in cellules 4 and 5 at the middle of the basal area stands out distinctly; the white dots at the proximal extremities of the postdiscal spots are conspicuous; the fringes of both wings uniformly dark; the white subapical dots of the forewing are indistinct or absent. The ♀ recalls on the upper-side those of the allied species, but has four distinct dark transverse bands on the hindwing; the under surface has the ground-colour rust-brown, as in the ♂, but somewhat lighter, and only differs materially in the markings in having the basal area of the hindwing distally broadly bordered with whitish grey; the black dot in the cell of the hindwing stands out sharply. Cameroons; discovered by the Swedish collector FRITZ THEORIN.

**D. tadema** *Hew.* (38 a) is very similar in both sexes to the preceding and particularly to *D. barombina*, *tadema*, but differs from them in the lighter, brown-yellow to grey-yellow, ground-colour of the under surface, the black dot in the cell of the hindwing beneath is large and stands out sharply; in the ♂ the fringes are unicolorous, dark, the subapical dots of the forewing small or indistinct and the basal area of the forewing distinctly obtuse-angled distally in cellule 4; in the ♀ the under surface of the forewing is brown-grey and that of the hindwing not or only indistinctly suffused with grey. Old Calabar, Cameroons, Gaboon; in the Cameroons probably the commonest species of the genus.

**D. nigropunctata** *Auriv.* (38 b), of which only the ♂ is known, is certainly very near to *D. tadema*, *nigropunctata*, but is much lighter both above and beneath. On the upper surface the black transverse bands are sharply contrasted with the brown ground-colour, which has only a slight violet gloss; the under surface is pale whitish yellow with the markings quite blurred; only the black dot in the cell of the hindwing and the elongate but much reduced black centres of the postdiscal spots on both wings stand out sharply; the basal area of the hindwing is hardly darker than the ground-colour and is bounded by a darker line; the dark spot in cellule 4 is scarcely indicated. Ikelemba, Congo.

**D. aurivillii** *Bartel* (38 b, c). This species was erected on a ♂ and is unknown to me in nature; it is described as follows: "Forewing somewhat more strongly incurved than in *D. veronica* *Cr.*, otherwise similar to that species, especially in the markings, but these are less prominent; a greenish gloss overspreads especially the cell, the blackish stripe beyond the discocellular is narrower and is only continued to vein 3; the upper part of this stripe is distally bounded by a small whitish spot; greenish scales mass themselves at various places near the costal margin; the row of white dots before the apex is rather strongly expressed; the reflections on the rest of the wing are much darker than in *D. veronica*, almost darker than even in *amaranta* *Karsch*; under surface very dark and sharply marked, otherwise similar to the former species; the distal boundary of the dark basal area of the forewing has a different course; hindwing very dark brown with a broad, sharply defined band in the basal part, this band proximally margined with yellow, broadest, broken up into spots, in the anterior part; cell with a large dark brown spot and a lighter one at the end; the blackish spot in the middle is more extended: distal part of the wing brown, very uniform, with a row of whitish dots and obscure dentate lines". Cameroons, at the Barombi Station.

**D. schultzei** *Auriv.* (37 e). This beautiful species is also only known in the male. Wings above dark *schultzei*, black-brown with four distinct blackish transverse bands between the end of the cell and the distal margin and four blackish transverse spots in the cell of the forewing; both wings in certain lights with very bright greenish blue reflection, which on the forewing covers the dark spots in the cell and cellules 1a—3, without, however, completely reaching the distal margin, and on the hindwing extends over the cell, cellules 2—5 and the costal margin of cellule 1c; cellules 4—6 on the forewing are without the blue reflection and each bears a white subapical dot and at each side of the first dark transverse band some whitish grey scales; the interspace between the second



and third dark transverse bands on the hindwing is rather densely covered with yellowish scales in cellules 4—6, forming an abbreviated yellowish transverse band (a distinct approach to the ♂♂ of the second subgroup); fringes of both wings dark. The under surface of the forewing at the costal margin brown as far as vein 4, then lighter, yellowish; the cell with curved white transverse lines; the basal area distally bordered with whitish between the costal margin and vein 4; the hindwing beneath rather light, uniform red-brown; the basal area is almost unicolorous, only ornamented with a black, light-ringed dot in the cell and a whitish grey transverse spot in cellule 7, distally it is bounded by a smooth line, broadly margined with whitish and very obtusely angled at vein 4; in cellule 4 the whitish bordering is interrupted by a blackish spot; the postdiscal spots are indistinct and as usual each marked proximally with a white dot; the anal area is only slightly mixed with violet-grey scales. In North-West Cameroons; discovered by Lieut. ARNOLD SCHULTZE.

*iris.* **D. iris** *Auriv.* (37 e, f). In the ♂ the wings are black-brown above, with indistinct blue reflection, but with sharply prominent blue markings. The cell of the forewing with 5 blue transverse streaks; the basal area somewhat darker, broadly margined with blue in cellules 3—6 on the forewing and in the middle of the hindwing; the postdiscal spots of the forewing with black centres and blue rings and distally sharply bounded by a black lunulate line; the hindwing beyond the middle with two sinuous black transverse lines, margined with bright blue; the under surface rather uniform brownish sand-coloured, indistinctly striated with brown and with indistinct markings; a dark dot in the cell of the hindwing; its basal area little darker than the ground-colour, distally curved and in cellule 4 bounded by a dark spot. In the ♀ the forewing is blackish above, only in cellules 1a and 1b light brown-yellow, the yellow colour, however, does not reach the distal margin and is darkened at the base; the transverse lines in the cell are also yellowish; the white transverse band is irregular and its spot in cellule 2 small and free; the hindwing is light brown-yellow above, with a dark marginal band, not sharply defined, a black lunulate line composed of sharp angles, and before this a transverse row of black dots; the under surface is coloured and marked almost as above; the basal area of the hindwing is as light as the distal part and very indistinctly separated from it; only the black-brown spot at the base of cellule 4 stands out distinctly; in the cell a dark ring; the whole under surface is indistinctly striated with light brown and the lunulate line and the dark dots are much duller than above. Katanga, southern Congo.

*karschi.* **D. karschi** *Auriv.* (37 d, e). In the ♂ both wings are deep black above; the hindwing is quite unicolorous without markings, only with white dots on the fringes and a dense black-brown pecten of hair along vein 1b; on the forewing four blue transverse streaks in and beyond the cell and the blue rings of the postdiscal spots contrast very beautifully with the deep black ground-colour; the white subapical dots are distinct and the fringes between vein 4 and the hinder angle white; the under surface is whitish grey in the apical part of the forewing and the anal area of the hindwing, otherwise blackish, but densely sprinkled with small black striae throughout. The ♀ is red-yellow above, in the apical half of the forewing blackish and at the distal margin of the hindwing darkened, the forewing with dark transverse markings in the cell and the hindwing with the usual row of dots and lunulate line; the white transverse band of the hindwing is distinguished by having the spots in cellules 4—6 much smaller than the other two; the under surface, as in the ♂, is finely striated with black and especially distinguished by having the basal area of the hindwing large, sharply angled, dark black-brown and densely striated with black, but otherwise quite without markings. Cameroons.

*saphirina.* **D. saphirina** *Karsch* (37 f). ♂: wings above coffee-brown with sapphire-blue reflection and very indistinct dark transverse bands; the hindwing lighter at the costal margin; forewing without subapical dots; the under surface is lighter brown; the forewing has lighter transverse striae in and beyond the cell and 2 or 3 white subapical dots; the basal area of the hindwing is somewhat darker, with its distal boundary curved, and with a small light ring in the cell; the postdiscal spots indicated by light dots. The ♀ differs considerably from the ♀♀ of the preceding species and belongs to another type, resembling *Catuna*; both wings have the ground-colour above black-brown; the oblique transverse band of the hindwing is light yellow and has the last spot, in cellule 2, placed almost free, the cell with 5 grey-yellow transverse streaks, similar transverse streaks also in cellule 1b; 5 whitish subapical dots and a distinct black submarginal line; the hindwing has a posteriorly abbreviated and much narrowed light yellow median band, placed between veins 2 and 7 and at the latter about 9 mm. in breadth; in cellules 1c—6 the lunulate line and a row of spots before it are very distinct, in cellules 1c—3 there is also a third row of dark spots; beneath both wings have the ground-colour brown-grey, but somewhat lighter in the middle of the hindwing; the basal area of the hindwing is quadrate and bounded by a darker, somewhat dentate line; it encloses a very indistinct dark ring in the cell and 2 or 3 small, lighter spots. Found in the eastern Congo region on the Ituri River and at Bolengi.

Near this species probably belong the following three, of which only the females are known.

*hobleyi.* **D. hobleyi** *Neave* is a species unknown to me in nature; the ♀ is described as follows: "Dusky olive-brown with yellow markings. Upperside — Forewing dusky olive-brown shaded with black scales. Crossing



middle of discoidal cell a pair of black streaks outlined in yellow; at extremity of cell a similar pair. Beyond extremity of cell an oblique, yellow, rather narrow bar extending from subcostal nervure to second median nervule. Nearer the apex and forming the other side of a triangle of which the costa is the base is a row of five white spots, the first above subcostal nervure, the last between third radial and first median nervules. Dark internervular streaks join the two sides of the triangle. Parallel with distal margin from a point close to apex to posterior angle is a dusky black submarginal stripe interrupted somewhat by crossing nervules near apex. — Hindwing: Base to just beyond end of cell, inner and distal margins dusky olive-brown. A large patch of an ochreous buff colour fills the discal half of the wing nearer costa. A dark row forming irregular dusky streaks, of which the outer is best defined, crosses the outer discal portion of the wing. Fringe olive-brown with some small white dots. Underside — Chestnut-brown, with costa, apex, posterior angle of forewing and whole of hindwing except distal margin shaded with grey; oblique bar on forewing white. Inner margin of forewing pale olive-brown. On hindwing an irregular line crosses basal portion just beyond extremity of cell, and a row of seven small white spots crosses discal area. Expanse: 59 mm". Kavirondo: Kisumu and Congo region.

**D. ernesti-baumannii** *Karsch* (38 a). Both wings above black-brown; the forewing with indistinct *ernesti-baumannii*. light transverse streaks in the cell and with the usual oblique band whitish yellow; of the spots of this band those in cellules 4—6 are much smaller than the other two, just as in the ♀ of *karschi*; the white subapical dots are distinct; hindwing above between the costal margin and vein 1b with an irregular, light yellow median band, 4—9 mm. in breadth, which projects most widely distad in cellule 4 and is consequently broadest there; the underside recalls that of *karschi* ♀, but is lighter, less striated, and has the basal area of the hindwing smaller and traversed by a row of light spots. Togoland.

**D. felicia** *Btlr.* recalls the preceding species, but has the markings more yellowish and differs from all *felicia*. the other ♀♀ of this subgroup particularly in having the oblique band on the forewing very narrow, almost linear; this is the case especially in cellules 2 and 3, where it is only represented by small, fine crescents; the crescent in cellule 2 is continued to the hindmargin by an undulate transverse streak in cellules 1b and 1a; in this respect *felicia* ♀ forms a transition to those of the third subgroup; on the hindwing the light yellow median band is formed almost as in the preceding species, but the rows of black spots in the distal part are more distinct, nearly as in *saphirina* ♀. The under surface is neither described nor figured by BUTLER; he only mentions that the oblique band of the forewing is white instead of yellow. Gold Coast.

**D. plagiata** *Auriv.* (37 d). Only the ♂ is known; it differs at once from all other species in the large, *plagiata*. sharply defined spot with intensive blue reflection in the anal area of the hindwing; the wings are otherwise black-brown above, with indistinct, darker transverse markings; the postdiscal spots in cellules 4—6 of the hindwing are faintly bordered with yellowish; the under surface is rather uniform rust-brown, slightly irrorated with grey at the anal angle of the hindwing; the cell of the hindwing has a black dot and its basal area is bounded by a dark curved line; the dark spot in cellule 4 is only weakly indicated. Congo: Bena Bendi.

## Second Subgroup.

The ♂♂ have the ground-colour above at least in part red-brown to orange-yellow or bear a similarly coloured transverse band on the forewing. The ♀♀ agree with those of the first subgroup in having on the forewing a light oblique band between the middle of the costal margin and vein 2.

**D. milnei** *Hew.* (37 f). In the ♂ both wings are deep black above, at the base bright rust-brown and at *milnei*. the costal margin of the hindwing broadly rust-yellow; near the apex of the cell the forewing has a light blue transverse streak and beyond the apex of the cell a large light blue spot; the subapical dots are often indistinct, the fringes white; on the hindwing the black ground-colour has a large velvety spot before the anal angle; the under surface is dark red-brown and quite similar to that of *D. plagiata*, only somewhat darker. The ♀ is orange-yellow above with the apical area and costal margin of the forewing and the marginal band of the hindwing black; this marginal band is posteriorly somewhat broader and nearly reaches the lunulate line, before which is placed a row of 7 black dots; otherwise the hindwing is entirely unmarked and not darker at the base; the oblique band of the forewing is pure white and forms large spots in cellules 2 and 3, but only very small or indistinct ones in cellules 4—6; the under surface is much lighter than in the ♂, but otherwise similar, only differing in having the basal area of the hindwing finely margined with whitish; the anal area is suffused with grey. Liberia to the Cameroons.

**D. fuscomarginata** *Bartel* (37 d). Of this species only the ♀ is known; it recalls those of *milnei* and *fusco-*  
*amicia*. *marginata*. The basal half of the forewing to beyond the apex of the cell and the hindwing to far beyond the middle are orange above; the costal margin and the apical half of the forewing as well as a broad marginal band and the postdiscal spots of the hindwing are black; the forewing has a white oblique band, which, however, is only feebly developed in cellules 4—6; the under surface is similar to that of *milnei* ♀; the hindwing is rounded, not, as in *milnei*, somewhat produced at the end of vein 2. From the Johann-Albrechthöhe, North Cameroons.

**D. amicia** *Hew.* (37 d, as "amicia"). In the ♂ the ground-colour of both wings above is red-yellow *amicia*. with black-brown marginal band and three black-brown transverse bands or transverse rows of spots between



this and the apex of the cell; in the cell of the forewing the usual dark transverse markings; the first of the dark transverse bands of the forewing is sometimes indistinct posteriorly; the under surface is similar to that of *plagiata*, but differs in having a sharply marked black spot in cellule 4 of the hindwing, as in *schultzei* ♂. According to KARSCH the ♀ has a white oblique band on the forewing and like the ♂ a dark spot in cellule 4 on the underside of the hindwing. Old Calabar and Cameroons.

*excelsior.*

**D. excelsior** *Reb.* is a beautiful species quite recently described, which seems to belong in the vicinity of *amica*. In the ♂ the wings have the ground-colour above bright red-yellow with the usual black transverse bands on both wings standing out sharply; the basal part of both wings is dark brown; the under surface is much paler and more washed-out, the forewing dull red-yellow with the dark markings of the upperside much paler, only the row of spots before the distal margin stands out more distinctly and has a white dot basally in each cellule from 4—6; the under surface of the hindwing is likewise dull red-yellow in the basal area and shows a small, round black spot with a white centre in the cell and a larger blackish spot beyond the discocellular (in cellule 4); two red-brown, not sharply defined transverse bands cross the middle of the wing; the distal band is marked with white dots at the inner side. The ♀ is considerably larger than the ♂ and the whole apical part of the forewing is black above, with a pure white transverse band; the rest of the upper surface is coloured like that of the ♂; the underside of the forewing is also much darkened in the ♀, with whitish grey transverse stripes in the cell; the hindwing beneath darker than in the ♂, strongly mixed with rust-grey, only towards the anal angle dull red-yellow with similar markings to the ♂ but more distinct. Discovered by GRAUER in the primeval forests on the north-western shore of Lake Tanganyika at an elevation of about 2000 m.

*melanops.*

**D. melanops** *Auriv.* (♂ = *unopunctata* *Baker*) (37 e) is easy to distinguish in both sexes from all other species by the large round black spot in the cell of the hindwing beneath, but is otherwise nearly allied to the preceding species. The ♂, which was described by BAKER as a separate species, is above similar to that of *lysandra*, but somewhat lighter, and beneath agrees fairly well with the ♀, which is figured here. In the ♀ the hindwing and the basal half of the forewing have a brown, and the apical half of the forewing a black ground-colour; the cell of the forewing encloses a black ring and the oblique band is pure white, of almost uniform breadth as far as vein 3 and with a small, nearly pure white spot in cellule 2; both wings have a distinct black submarginal line and the hindwing indistinct postdiscal dots; the whole under surface is dark violet-grey with indistinct markings; the basal area of the hindwing is of the usual shape, but is very indistinctly defined; no dark spot in cellule 4. Congo: Bena-Bendi and Mawamba.

*doriclea.*

*lysandra.*

*infusca.*

**D. doriclea** differs from the other species in the shape and extent of the basal area of the hindwing beneath; this is nearly twice as long as broad and posteriorly almost reaches the middle of vein 2, while distally it is bounded by a thick, nearly straight black-brown band and forms a sharp point on vein 2. In the ♂ the upperside of the wings is lighter or darker umber-brown with three black transverse spots at the costal margin of the forewing and two more or less distinct rows of spots or transverse lines before the distal margin; beneath the forewing is yellowish with a black-brown transverse spot in the cell and a large one at the middle of the costal margin; the hindwing beneath is lighter at the costal margin and towards the anal angle gradually darker; it has always a dark spot in the cell. In the ♀ the hindwing and the basal part of the forewing are yellow-brown above, with the usual dark markings in the cell of the forewing and two curved rows of black streaks beyond the middle of the hindwing; the latter is broadly darkened at the distal margin; the apical half of the forewing is black-brown and encloses the white oblique band; this is rather broad and is basally broadly margined with black beneath also; the under surface is yellowish with a large black-brown spot in the cell of the forewing. — **doriclea** *Drury* is the northern race, occurring in Sierra Leone to Dahomey, and only differs from *lysandra* in the darker colour and more indistinct markings. — **lysandra** *Stoll* (37 c) is lighter and differs from the following form in having the dark boundary-line of the basal area of the hindwing much thickened towards the costal margin and the spot in the cell of the hindwing unicolorous. Old Calabar and Cameroons. — **infusca** *Capronn.* only differs in having the dark boundary-line of the basal area of the hindwing much thinner and but little thickened towards the costal margin and in the spot in the cell of the hindwing having a light centre. Occurs in the Cameroons as an aberration and in the Congo as a separate species.

### Third Subgroup.

In the ♀♀ of this subgroup the light oblique band of the forewing, which distinguishes the ♀♀ of the two preceding subgroups, is entirely absent. Instead of it the forewing has several light yellow transverse lines or rows of spots, directed vertically towards the hindmargin.

*intermixta.*

**D. intermixta** *Auriv.* (39 c). Only the ♀ is known. This is quite aberrant in the markings, especially on the upperside of the forewing, and has some points in common with the ♀♀ of the first group, from which, however, the species differs entirely in the shape of the basal area of the hindwing; both wings black-brown above, with yellow markings; the forewing with 5 yellowish transverse streaks in the cell and two abbreviated yellow transverse stripes starting from the hindmargin and running parallel with the distal margin, the first placed near to the base and terminating at the proximal end of cellule 2 and the second commencing at the middle of the hindmargin and nearly reaching vein 4; the postdiscal spots are ringed with yellow and the submarginal line is thick and black; the white subapical dots



are distinct, the upperside of the hindwing has a broad light yellow median band, anteriorly much widened, which reaches both the costal and inner margins and in cellules 4—6 is joined to the thick yellow rings of the postdiscal spots; the submarginal line thick and black here also; the blackish basal part is distally broken up into spots; the under surface is grey mixed with whitish and at the distal margin darker brownish; the basal area of the hindwing is rounded quadrate, distally dentate, only in parts darker than the ground-colour, and encloses a large, rounded black spot in the cell. Congo: Stanleyville.

**D. amaranta** Karsch (38 f). It is unfortunately very uncertain whether the sexes figured here really *amaranta*. belong together. The ♂, which was first described, has the ground-colour dark coffee-brown above, with a dark velvety blue gloss throughout except at the costal margin of the hindwing; the forewing with three light blue transverse streaks in the cell and three bluish subapical dots before the apex; the black submarginal line is rather indistinct on both wings; beneath the ground-colour is very dark coffee-brown with the distal half of the forewing much lighter and at the costal margin densely sprinkled with violet-grey scales, at the costal margin in the dark basal part four violet-grey transverse streaks; the basal area of the hindwing is blackish, distally curved and bordered by some violet-grey spots, of which only the one in cellule 1e is somewhat larger; the postdiscal spots are only indicated by light dots; fringes of both wings white. The ♀ is marked almost exactly like that of *gambiae* above, but differs in having the spots of the transverse rows on the forewing united into transverse lines and in the light yellow median band of the hindwing extending very nearly to the costal margin; the under surface on the contrary is entirely different and most recalls the underside of *D. ernesti-baumannii* ♀; the basal areas of both wings are black-grey, their distal boundary sharply defined, and exactly meeting at the hindmargin of the forewing and the costal margin of the hindwing; that of the forewing is emarginate between vein 2 and the hindmargin and that of the hindwing in cellule 4; the ground-colour of the distal part is light grey-yellowish and especially towards the distal margin striated with brown, the distal margin of the forewing is broadly darkened with red-brown behind the apex as far as vein 3; the basal part of cellule 4 on the hindwing is entirely without dark spot. Cameroons and Uganda.

**D. gambiae** Feisth. (37 a) is a long known, widely distributed and very distinct species; the hindwing in *gambiae*. both sexes has short, obtuse lobes at veins 2 and 3. The ♂ is red-yellow above with black transverse markings and strongly recalls the ♂ of *amica*; the broadly darkened hindmargin of the hindwing, however, is posteriorly sharply separated from the ground-colour; the forewing is bright orange beneath, at the costal margin darkened and grey-scaled for the breadth of the cell; the hindwing beneath has a very broad blackish red-brown costal-marginal band, sparsely scaled with grey at the margin, and a narrower distal-marginal band, which is sharply bounded proximally by the submarginal line; the basal area is coloured like the costal band, but has a broad light yellow transverse band, extending from the inner margin to the anterior margin of the cell; the rest of the wing has the ground-colour yellow, but is very broadly suffused with brown-grey in the middle. The ♀ is marked almost like the ♂ beneath, but has a lighter ground-colour and is only very little suffused with grey in the middle of the hindwing; the upper surface on the contrary is quite different: the forewing is black-brown with four light yellow or grey-yellow transverse streaks in the cell and four transverse rows of light yellow spots or streaks beyond it, of which the first touches its posterior angle and the last, before vein 5, is indistinct; the hindwing is black-brown above and has between veins 3 and 7 a very large light yellow median spot, which in cellule 5 attains a breadth of about 10 mm., but narrows rapidly posteriorly. Senegal to the Cameroons and the Congo.

### Third Group.

The species of this very natural group differ from all others in having the basal area of the hindwing large and at its hinder angle widely produced posteriorly and ending in two points: these are placed on veins 2 and 3. In addition the underside of the hindwing has behind the costal margin a light stripe extending from the base to the apex and crossing the basal area. The light oblique band on the upperside of the forewing, which characterizes the ♀♀, is in this group more or less distinctly developed in the ♂♂ also.

**D. ampedusa** has almost the same markings as *atossa* beneath, but all much duller and more indistinct and the ground-colour more violet-grey; the upper surface has a dark yellow ground-colour, which, however, shows up but little between the broad black transverse markings and in the basal part especially is indistinct. — **ampedusa** Hew. (37 b; both figures are unfortunately too light). In the ♂ the oblique band *ampedusa*. of the forewing is not lighter than the ground-colour and not more sharply defined than the other light transverse bands, in the ♀ it is pure white on both surfaces. Gold-Coast to Old Calabar. — **leonis** Auriv. *leonis*. (37 e; 40 a) only differs in having the oblique band of the forewing in the ♂ upperside sharply defined and more brightly coloured than the transverse bands and in the ♀ light yellow on both surfaces. Sierra Leone.

**D. atossa** (37 a, b). In the ♂ both wings are rust-brown above with black marginal band and *atossa*. black submarginal line; the forewing has in addition two black transverse bands, of which the first only reaches vein 2 and the other is more or less united with the submarginal band and, gradually narrowing, reaches the hindmargin; the under surface, as the figure shows, is variegated with a mixture of purple-brown, yellow, orange and whitish grey. The ♀ is much larger and on the upper surface has the basal half of the forewing and the hindwing as far as the black marginal band bright orange-red; the apical half of the forewing is black with a large white apical spot and white oblique band, the latter, however, broken up into spots, as the



spot in cellule 4 is wanting and that in cellule 2 well isolated. Old Calabar and Cameroons. An aberrant *australis*. female form, ♀-ab. **australis** ab. nov., is smaller than the ♀ of the type-form and differs in having the oblique band of the forewing continuous to vein 3, the spot in cellule 4 being present; the spot in cellule 2 is also placed nearer to that in cellule 3; the marginal band of the hindwing is much narrower, indistinctly defined proximally and accompanied by two transverse rows of dark streaks or spots. Congo.

### 10. Gattung: **Euryphene** Westw.

The peculiarity of this extensive genus is that it connects the very dissimilar species of the genera *Diestogyna* and *Euphaedra* quite naturally with one another. That is to say, the first species as here placed approximate closely to *Diestogyna* and the last are scarcely distinguishable in form and markings from *Euphaedra*. Indeed *Euryphene* agrees so completely in the build of the body with *Euphaedra* that, as the synopsis (p. 143) shows, the only difference is in the colour of the palpus.

The species of *Euryphene* are medium-sized to rather small Nymphalids, which have their headquarters in the West African forest-region and in German East Africa are only represented by a single species; southwards they do not extend beyond Angola.

The ♀♀ are on an average larger than the ♂♂ and usually also differ considerably from them in the colour and markings of the upper surface. On the underside on the contrary the sexes are similarly marked and hence it is always easy to recognize the identity of the ♂♂ and ♀♀.

Of the earlier stages only the pupae are known. The pupa-case is thin, the form angular; the head has two conical points and on each side in the middle near the posterior end of the wing-cases there is a sharp angle; the dorsal surface is sharply keeled, gradually rising in height from the head to the third segment of the abdomen, where it terminates in a long conical spine and then gradually slopes down again towards the cremaster, forming some small elevations in the dorsal line; the cremaster is rather long and nearly straight.

The species are divisible into several groups, the most important characters of which are given in the following synopsis.

#### Synopsis of the Groups.

- I. The ♀♀ above with a light yellow-whitish median band on the hindwing, narrowed towards the inner margin, and with a pattern which strongly recalls that of the *Catuna* species. In the ♂♂ the upper surface of the wings is orange, brown-yellow or black-brown with 4 or 5 blackish transverse bands or nearly black with blue reflection; they differ from similarly coloured ♂♂ of other groups partly in the smaller size (expanse 50—55, rarely up to 60 mm.), partly in having the under surface never green or greenish and the base of the costal margin of the hindwing beneath never white; forewing always without subapical band above. Second Group.
  - II. The ♀♀ never have the *Catuna*-like markings above and have no yellow transverse band on the hindwing.
    - A. Hindwing beneath with dark costal stripe, commencing at least at the first quarter of the costal margin and reaching the apex; hence at least the last three quarters of cellule 8 are much darker than the ground-colour.
      - a. The costal stripe on the underside of the hindwing is about 3 mm. in breadth, starts from the base and covers not only the base of the cell and cellule 8, but also the greater part of cellule 7. Both wings above with red-yellow ground-colour. First Group.
      - b. The costal stripe on the underside of the hindwing only begins at the first quarter of the costal margin and is posteriorly bounded by vein 8, consequently covering only the narrow distal part of cellule 8; the ground-colour beneath bright light yellow. Both wings black above, for the most part suffused with bright greenish blue or light blue. Seventh Group.
    - B. Hindwing beneath without dark costal stripe.
      - a. Wings beneath with a distinct, common, narrow, straight, dark transverse band, extending from the apex of the forewing to the anal angle of the hindwing at the extremity of vein 1b. Fifth Group.
      - b. Wings beneath without common transverse band or with a transverse band which terminates at the middle of the inner margin of the hindwing.
        - \*. Wings beneath without markings in the cell or with dull, never pure black spots.
        - †. Forewing above with 2 or 3 transverse rows of white spots beyond the cell. Sixth Group.
        - ††. Forewing above without white spots beyond the cell or only with white subapical band or white rings to the subapical dots.
          - §. Forewing above with a broad yellow transverse band, beginning at the middle of the costal margin and reaching vein 2. Fourth Group.
          - §§. Forewing above without light transverse band or with a subapical band which at most reaches vein 3 or shades into the ground-colour without any sharp delimitation. Third Group.
- \*\*. Both wings beneath with pure black spots in the cell. Eighth Group.



## First Group.

The only species belonging here differs from all others both in colouring and markings and also in the shape of the wings. In the ♂ the distal margin of the forewing is rather deeply emarginate and the hindwing at the apex broadly rounded and at the anal angle somewhat produced with two very short, obtuse lobes; vein 1b is long haired for its entire length. In the ♀ the forewing is shaped as in the ♂, but the hindwing fully rounded at the anal angle.

**E. elpinice** Hew. The wings in the ♂ red-yellow above, little marked with black; the cell of the *elpinice*. forewing with a black ring in the middle and a hollow transverse marking at the end; beyond the cell three black transverse lines begin at the costal margin, of which the first only extends to vein 4, the second is continued by some indistinct free spots in cellules 4—2 and the third reaches vein 1, but is broken up into spots; at the distal margin a black marginal band 2 mm. in breadth; the upperside of the hindwing is broadly black-grey at the costal margin and has in addition a dark marginal band only 1 mm. in breadth, an even narrower submarginal band broken up into streaks and some dark transverse markings in the cell; the underside of the forewing is dark violet-brown with two large spots in the cell, a spot at the costal margin beyond the apex of the cell and the apex of the wing white or whitish; on the hindwing the basal area and a broad costal stripe are black-brown, the basal area, however, with a whitish band between vein 1a and the anterior margin of the cell, the distal half is violet-grey and has beyond the middle some dark spots, basally bounded by whitish streaks. The ♀ is orange above and has the apical part of the forewing as far as the cell black with a short, dentate white oblique band between the middle of the costal margin and vein 4 and white submarginal spots in cellules 3—9; the hindwing only with dark marginal band and submarginal line; the under surface as in the ♂, only somewhat lighter. Old Calabar to Ogowe.

## Second Group.

This group is especially characterized by the colour and markings of the ♀♀. These have, as shown in figures d, e and f on plate 41, a light yellow median band on the hindwing and the ground-colour of the upperside of the forewing is light yellow, interrupted by dark transverse bands or transverse rows of spots; in this respect these ♀♀ strongly recall the species of the genus *Catuna* and also the ♀♀ of some *Diestrogyna* species. The dark markings of the forewing consist of 4 transverse spots or transverse streaks in the cell, another at its apex and 5 transverse bands placed more or less obliquely towards the hindmargin, of which the first covers the base of cellules 1a and 1b and only reaches the origin of vein 2, the second covers the base of cellules 2 and 3 and is often widened in cellules 4—6, the third crosses the middle of the wing, the fourth is composed of rounder spots and the fifth forms the marginal band; the hindwing has two dark, often indistinctly separated transverse bands at the base and four outside the median band, of which, however, the first two are anteriorly in cellules 5 and 6 more or less displaced by the median band. In the ♂♂ the ground-colour of the upper surface is usually orange to yellow-brown, rarely almost black, and the light median band of the hindwing is entirely absent; the black transverse bands are quite the same as in the ♀♀, but in the ♂♂ always completely developed or when the ground-colour is very dark not distinctly prominent. The apex of the forewing is never white. The species are very nearly allied.

**E. carshena** Hew. (41 d, f). The ♂ of this species differs from the others at once in having the wings *carshena*. blackish above and the dark transverse bands consequently indistinct or absent; on the forewing distinct black streaks or spots are present only in the cell, at the middle of the costal margin and near the base of cellules 2 and 3; on the hindwing there is a large black spot just beyond the apex of the cell in cellules 4—6; the forewing, however, is bright greenish blue from the base to beyond the middle and the hindwing in the cell and in cellules 1c—4; the blue colour is rather sharply separated from the ground-colour; the under surface is rather light yellow with dull brown or dark markings, of which only a dot and two spots in the cell of the forewing, a dot and two rings in the cell and a larger spot near the base of cellules 5 and 6 of the hindwing stand out sharply; the blackish submarginal dots are also quite distinct. The ♀♀ of this and the next species are distinguished from the rest by the absence in cellules 1a and 1b of the dark spots of the third transverse band on the upperside of the forewing, so that the light yellow ground-colour forms a large spot in the middle of the hindmargin; the median band of the hindwing is only inconsiderably widened towards the costal margin, in cellule 5 scarcely more than 5 mm. in breadth and in cellule 6 clothed with dark scales; the under surface has the same markings as in the ♂, but is lighter; the spot in cellules 5 and 6 of the hindwing is large, quadrate and very distinct. Gold Coast to the Congo and Albert Nyanza.

**E. tentyris** Hew. (41 f). The ♂ may be at once known by the upperside of the forewing having *tentyris*. along the costal margin a broad bluish green reflection, so that the ground-colour appears light green and the dark spots dark green; the greenish colour is posteriorly sharply bounded by vein 2 and distally scarcely reaches the fourth transverse band; the ground-colour of the upper surface is otherwise dark yellow-brown and the dark transverse bands conspicuous; the under surface is grey-brown and characterized by a quadrate snow-white spot before the middle of cellule 7 on the hindwing. The ♀ is very similar to that of *carshena* and has like it a yellow hindmarginal spot on the forewing, but this is narrower and extends somewhat into cellule 2; the median band of the hindwing is anteriorly somewhat broader, about 6 mm. in cellule 5. Sierra Leone to Angola. — **seeldrayersi** Auriv. differs in having the wings in the ♂ entirely dark blue above with indistinct *seeldrayersi*.



markings, but beneath they are as in the type-form, only somewhat more grey, while in the ♀ the light yellow hindmarginal spot on the forewing is divided by a black transverse line. Is perhaps an independent species. In the interior of the Congo region.

*subtentyris.* **E. subtentyris** Strand. "Nearly allied to *tentyris* Hew., but characterized *inter alia* by the faint bluish violet reflections present only in the dorsal area of the forewing; the species further differs from *tentyris* as follows: colouring of the upper surface darker, in the costal area of the forewing no bluish reflections at all, on the other hand with these reflections on the entire hindwing excepting its dorsal area; the rows of black spots on the forewing are of uniform distinctness to the hindmargin; on the hindwing the whole basal area is suffused with blackish." Cameroons.

*abesa.* **E. abesa** Hew. (41 d, e) differs from all the other species of this group in the underside of the hindwing having three deep black dots in the cell instead of a dot and two rings. In the ♂ the wings are very dark velvety black-brown above; on this dark ground-colour the black transverse markings only show indistinctly. The ♀ has the transverse rows of spots on the forewing complete and the yellow median band on the hindwing at least 10 mm. in breadth in cellules 5 and 6. Gold Coast to the northern Congo.

**E. absolon.** Both wings in the ♂ with yellow-brown ground-colour above and continuous or nearly continuous dark transverse bands, beneath with yellow-grey or grey-brown ground-colour without large blackish markings and without dark oblique line in the apex of the forewing. The ♀ above very similar to that of *absolon*, *zonara*, but beneath without dark oblique line in the apex of the forewing. — **absolon** F. (41 d, f). Wings above in the ♂ without blue reflection. Cameroons to the Congo. — **micans** Auriv. The wings of the ♂, when viewed obliquely from the side, have a bright blue reflection above and are somewhat darker on both surfaces than in the type-form. Cameroons and Congo. — **entebbiae** Lathy is somewhat larger and even darker than *micans*, but seems otherwise entirely to agree with it; it is not mentioned whether the wings have a blue reflection above or not. Uganda.

*zonara.* **E. zonara** Btlr. (41 d). In the ♂ the wings are orange or light brown-yellow above and the black transverse bands narrow and almost completely broken up into small, well separated spots; hence the light ground-colour occupies much more space than in the other species; the under surface is grey-yellowish and only differs from that of *absolon* in having the apex of the forewing divided by a not sharply defined oblique band running in the direction of the middle of the hindmargin. The ♀ agrees with the allied species above and only differs beneath from that of *absolon* in the dark oblique band at the apex of the forewing. Gold Coast to the interior of the Congo region.

*mandinga.* **E. mandinga** Fldr. (41 d) differs beneath in both sexes in the yellow-grey or whitish grey basal half of both wings, which is chequered with large, angular black-grey spots; the dark spots are placed chiefly in the basal part of cellules 1—6. In the ♂ the wings are bright orange above, somewhat darker than in *zonara* and with the dark spots somewhat larger but still free. The ♀ exactly agrees with that of *zonara* above. Senegal to Congo.

*oxione.* **E. oxione** Hew. (41 c) is distinguished by the black-brown, nearly straight and very distinct transverse band on the under surface; this extends from the apex of the forewing to the middle of the inner margin of the hindwing and is somewhat more sharply expressed on the hindwing than on the forewing. In the ♂ the ground-colour of the upper surface is dark yellow-brown, and the dark transverse bands are broad and continuous. The ♀ is similar to the other ♀♀ above, but has the apex of the forewing very acute. Old Calabar to Angola and Toro.

### Third Group.

The ♂♂ agree with those of the second group in having just the same dark transverse bands above, though when the ground-colour is very dark the transverse bands sometimes become quite indistinct; they differ from the ♂♂ of the preceding group either in the white base of the costal margin on the forewing beneath or in the quite different, more or less greenish ground-colour of the under surface. On the upper surface the forewing has at the costal margin between the second and third transverse bands in the ♀♀ nearly always, but in the ♂♂ rarely, a light subapical band, which, however reaches at most to vein 3. The ♀♀ are quite unlike those of the second group, are above more or less suffused with green or blue (especially on the hindwing) and have usually no dark transverse bands or these are indistinct.

*partita.* **E. partita** Auriv. (41 c) differs from all other species in the sharply defined, common, nearly straight dark transverse band on the under surface, which has quite the same course as in *oxione*; the under surface is of a delicate, greenish or bluish grey colour with a dark submarginal line on both wings; the hindwing further with a similar line behind the middle. In the ♂ the wings have a dark brown ground-colour above, with distinct transverse bands and a brown-yellow subapical band on the forewing. The ♀ has as distinct black transverse bands on the upperside as the ♂, but the ground-colour of the forewing is light green and that of the hindwing coffee-brown; the subapical band of the forewing is white and the apex of the wing sharply produced. This very distinct species has been found in the Cameroons and the Congo region.



**E. iturina** *Karsch* (41 b). The ♂ is dark yellow-brown or light chestnut-brown above and has the usual *iturina*. dark transverse bands narrow and continuous, only the fourth is almost completely broken up into rounded spots; the distal margin of the forewing is moderately emarginate and the submarginal line of the hindwing strongly undulate or almost angled; under surface of the wings grey-brown; in the forewing the distal part from the middle of the hindmargin to the apex is dark brown with the inner margin almost straight and encloses a transverse row of 5 slightly lighter, rounded, dark-pupilled spots posteriorly increasing in size; the inner boundary-line of this triangular dark brown distal border is proximally accompanied by an undulate dark brown line and the interspace between the two is filled up with dirty grey; hindwing beneath with two contiguous brown ring-spots in the cell, near the costal margin shortly before the middle of cellule 7 with a dirty white transverse spot and behind this with a washed-out brown arcuate band. In the ♀ the apical part of the forewing from the middle of the costal margin to the hinder angle is blackish with a white subapical band composed of three spots in cellules 4—6 and thick white rings to the submarginal spots in cellules 2—4; the basal half of the forewing and the hindwing are yellow-brown with incomplete or indistinct black markings, only the submarginal line of the hindwing is sharply expressed, continuous and acutely angled; under surface lighter than in the ♂, greenish or yellowish grey with the same markings as in the ♂. Congo region, on the Ubangi and Ituri Rivers.

**E. brunhilda** *Kirby*. Under this name KIRBY described as the ♂ a form which seems to be identical *brunhilda*. with *laetitia* and as the ♀ a species which is unknown to me. The description of the ♀ is as follows: „Female tawny; anterior wings with the apical half brown, an irregular white blotch on the costa just beyond the middle, and a submarginal row of bluish-white spots, the larger ones centred with black, and the last of the series replaced by a black spot; posterior wings with a submarginal row of dusky markings, followed within by a row of obsolete dusky spots. Underside pinkish grey, with some indistinct annular markings in the cells, and the light markings of the upperside reproduced; a pale spot at the apex of the anterior wings, from below which a brown band curves inwards to the middle of the inner margin, and outwards across the middle of the posterior wings“. This description is not adequate to differentiate the species with certainty from its allies. Cameroons.

**E. chriemhilda** *Stgr.* (44 d). The ♂ stands in almost exactly the same relationship to the allied species *chriemhilda*. as *zonara* ♂ to the other species of the second group; the upper surface is lighter, dark orange-yellow, and the black transverse bands are narrow and almost completely broken up into free spots; in addition the black submarginal line of the hindwing is almost uniformly eurved, neither undulate nor dentate; the under surface recalls that of *iturina* ♂, but differs in not having the apex of the forewing divided by the dark band. The ♀ very nearly agrees with that of *iturina*, but has the subapical band of the forewing less dentate and the dark transverse bands more distinct and differs particularly in the almost uniform, not sharply angled submarginal line on the upperside of the hindwing; the under surface has the ground-colour fleshy grey. Usagara, German East Afrika.

**E. fulgurata** *Auriv.* is only known in the female. The wings are brown above in the basal half and at *fulgurata*. the distal margin, but between the second band and the sharply angled submarginal line have for the most part a whitish ground-colour, in which are placed the free blackish spots of the third and fourth transverse rows; the under surface is brownish at the base and whitish grey in the distal part; somewhat before the middle a row of whitish, dark-edged spots runs from the hindmargin of the forewing, straight as far as vein 4 and then bent round towards the middle of the costal margin. Lingunda, Congo.

**E. congolensis** *Capronn.* is a third species very nearly allied to *iturina* and *chriemhilda*; it differs *congolensis*. from both in having the submarginal line on the upperside of the hindwing formed of proximally open crescents or weakly undulate. In the ♂ the ground-colour of the upper surface is dark yellow-brown and the transverse bands continuous or nearly so; the under surface is very dark brown with two light yellow transverse spots in the cell, a light yellow subapical band on the forewing and a large, almost quadrate light yellow spot before the middle of cellule 7 on the hindwing; the latter is slightly mixed with violet-grey scales at the anal angle. The ♀ differs in having the ground-colour of the upper surface grey-greenish, with only the apex of the forewing outside the subapical band black; the transverse bands are rather distinct but broken up into spots; the subapical band of the forewing is of almost uniform breadth and pure white, posteriorly it is joined to the very thick light yellow rings of the fourth transverse row in cellules 2—4; the under surface is marked like that of the ♂, but much lighter. Congo to Uganda.

**E. phranza** *Hew.* (41 b) may be known at once by the large snow-white spot in cellule 7 on the hind- *phranza*. wing beneath; behind this there are two small white spots in cellules 5 and 6. In the ♂ the wings are dark yellowish brown above with sharply defined black transverse markings; the second transverse band of the forewing is thick and deep black, the third on the other hand narrow and at the costal margin indistinct; the submarginal line is placed near to the distal margin and is on the hindwing weakly and somewhat irregularly undulate; the under surface is dark grey-brown, rather uniform and with indistinct markings; the costal mar-



gin of the forewing is broadly white at the base and the extreme apex whitish grey. The ♀ differs from the allied species in having the apex of the forewing white on both surfaces; the forewing has between the costal margin and vein 4 a subapical band, which is yellowish above, white beneath; the cell and cellules 1a—2 of the forewing as far as the fourth transverse band and also the entire hindwing to the submarginal line are suffused with green; the green colour is lighter in the middle of the hindwing, forming a light grey median band; the under surface is nearly as dark as in the ♂ and has two additional white transverse spots in the cell of the forewing. From the Niger to the Kuilu River. ♀-ab. **moreelsi** *Auriv.* only differs in lacking entirely the green colour of the upper surface and in having the ground-colour of both wings above black-brown. Ikelemba, Congo.

*cottoni.* **E. cottoni** *Baker* is unknown to me in nature; it is described as follows: ♂. Both wings with alternate black-brown and tawny transverse stripes and rows of spots; forewing with three spots in the cell and one behind its apex, which is confluent with an oblique transverse row of black spots, then follows a broad transverse band, interrupted at the veins and at vein 6 angled to the costal margin; outside this band the forewing is black-brown with large black submarginal spots surrounded with tawny; hindwing with darkened basal area and broad median tawny band, followed by a broad curved dark band tapering towards the inner margin; a postmedian curved row of large black spots broadly surrounded with tawny; a broad, sharply defined, black, scalloped submarginal line; beneath both wings are light ochreous brown with indications of the markings of the upper surface. In the ♀ both wings are paler brown above with dusky ochreous markings; the forewing with clear pale ochreous subapical band and the hindwing with broad, indefinite, median band of the same colour. 60—74 mm. Congo region, at Makala and Beni Mawambe.

*severini.* **E. severini** *Auriv.* is so near to the following species that it is sufficient to mention the differences. The ♂ only differs above in the somewhat reddish yellow-brown ground-colour, beneath in the dark red-brown ground-colour, somewhat inclining to violet; the underside of the hindwing is entirely without the violet-grey colour at the anal angle which is so distinct in *sophus* and *laetitia*, as well as the white transverse streak in cellule 7. The ♀ closely resembles that of *laetitia*, but differs somewhat on the under surface, which is not yellowish and recalls that of the ♂ in having a slight violet tinge; the black submarginal line of the hindwing is much more sharply dentate or undulate than in *laetitia* ♀. Bena-Bendi, Congo.

*laetitia.* **E. laetitia** *Plötz* (41 e). In the ♂ the wings are dark olive-brown above with the usual blackish transverse bands; these are all distinct and not or scarcely broken up into spots; the under surface is also dark olive-brown, without distinct dark markings; the distal part is somewhat darker than the basal and on the forewing its proximal boundary is curved, as it begins narrowly at the apex and at the hindmargin reaches the middle; the forewing has two whitish transverse shades in the cell, a whitish spot at the costal margin and one at the apex; at the inner margin of the dark distal part there is in cellule 1a and in cellule 2 an often indistinct whitish transverse streak; the hindwing has a narrow white transverse streak in cellule 7 and in the anal area is broadly overspread with violet-grey scales. In the ♀ the wings are black-brown above, at the hindmargin of the forewing and on the hindwing beyond the middle green; the forewing has a white or yellowish subapical band, posteriorly in cellules 3 and 4 always yellowish; beneath this band is pure white and is continued to the hindmargin by a narrow oblique stripe; the under surface has an ochre-yellowish or light olive ground-colour and for the rest the same white markings as in the ♂. Sierra Leone to Gaboon. ♀-ab. **tia** *Suff.* differs in the absence of the white submarginal dot in cellule 6 on the upperside of the forewing which occurs in the type-form. Gold Coast.

*sophus.* **E. sophus** *F.* (41 b) is distinguished by the pointed, almost falcate forewing with the distal margin broadly emarginate. In the ♂ the wings are very dark brown above with rather indistinct transverse bands; the forewing has between the costal margin and vein 4 or 3 a sharply defined yellow subapical band; the under surface is irregularly chequered with violet-grey and greenish brown and the costal margin of the forewing between the middle of the cell and the subapical band broadly yellow-grey; from the apex of the forewing to the middle of the hindmargin runs a whitish curved line, which at least from the hindmargin to vein 4 is distinct and dark-edged, on the hindwing it is continued as a transverse streak in cellule 7; the hindwing is broadly violet-grey at the anal angle. In the ♀ the forewing at the base and at the hindmargin and the hindwing to the submarginal line are light greenish blue; the subapical band of the forewing is very broad, light yellow, and reaches vein 3; beneath both wings are violet-grey with the broad, proximally curved distal area of the forewing and a triangular transverse shadow on the hindwing, extending from the middle of the costal margin towards the middle of the distal margin, dark greenish brown. Sierra Leone to Angola. ab. **phreone** *Feisth.* only differs in the male in the somewhat lighter ground-colour; the ♀ has a white subapical band on the upperside of the forewing and is lighter blue above. Senegal to Liberia and in the Congo region.

*braytoni.* **E. braytoni** *E. Sharpe* is unknown to me. The description runs: "♂. Fore wing bluish black, the central area metallic blue, costal and hind margins brownish black. The dark apical area relieved by a transverse band of three white hastate spots suffused with pale blue. Hind wing entirely metallic blue, the costa, hind and inner margins, brownish black. Under side: Ground colour brown, with a green suffusion over the upper



half of the wing, a submarginal border of brown spots along the hind margin, and two distinct brown spots in the discoidal cell, the white apical band nearly obsolete; the costa at the extreme base bluish white. Hind wing similar in colour to the fore wing, two brown spots in the cell, a whitish spot near the costa, situated near the centre of the wing, followed by a faint white line, but only as far as the first subcostal nervule. Expanse, 2.7 in. ♀. Similar in colour to the male, the metallic blue on both wings somewhat brighter in colour. On the fore wing the white apical band broader and more strongly marked, a white spot at the extreme apex of the wing. Under side exactly similar to that of the male, the brown transverse band on the fore wing more strongly indicated than in the male. Expanse, 3.3 in. This species is allied to the *E. sophus*, *Fabr.*, and *E. aurora*, *Auriv.*, group, but is distinguished from both by its beautiful blue colour. The sexes are alike, which is not usually the case in this genus."

The following species are distinguished by the green or greenish ground-colour on the underside of both wings. In the ♀♀ the apex of the forewing is often white.

**E. aurora** *Auriv.* is only known in the female. The wings are very dark brown above, at the apex of the forewing to vein 5 nearly black; the dark transverse bands are indistinct; the subapical band, which forms a spot in cellule 4 also, and the apex of the forewing are white; from vein 2 of the forewing to vein 2 of the hindwing runs a very indistinctly defined, bluish violet or bronzy median band; the under surface is dull green, in the basal part of the hindwing somewhat darker and beyond the middle interrupted by the thick, somewhat lighter rings of the postdiseal spots; as in many other species, a curved, dark olive-brown stripe runs from the apex of the forewing to the middle of the hindmargin; in addition to the white markings of the upper surface the forewing has a transverse band in the cell and the hindwing a transverse streak in cellule 7. Congo region, on the Ubangi River.

**E. wilwerthi** *Auriv.* (41 a, b). The ♂ is chestnut-brown above with dark transverse bands and very similar to the ♂ of *iturina*, but beneath the wings are quite different, dark greenish, in the basal part more grey and in the distal more greenish; the distal part of the forewing is proximally bounded by the usual curved line; this is continued on the hindwing as far as vein 5 or 4, but is only in cellule 7 thick and sharply defined; at the costal margin of the forewing are placed 2 or 3 not sharply defined whitish grey spots and the apex is also more or less grey-scaled. The ♀ is dark brown above without distinct transverse bands, only the submarginal line quite distinct, very slightly undulate; the under surface is light greenish grey with white subapical band on the forewing and otherwise the same markings as in the ♂; from *aurora* ♀ it differs in the dark apex of the forewing and the entire absence of the metallic median band on the hindwing. Congo to Ituri.

**E. demetra** *Godt.* (41 b). The ♂ differs from all other species in the black-grey, somewhat glossy ground-colour of the upper surface; the black transverse bands are continuous and distinct; the narrow costal area of the forewing is tinged with bluish; the subapical band is entirely absent; the under surface is bright green, somewhat darker in the distal part, the extreme apex of the forewing, a transverse streak in cellule 7 of the hindwing and 2 or 3 indistinct spots at the costal margin of the forewing are white or whitish; the proximally curved distal area of the forewing on the contrary is not or only indistinctly bordered with white. In the ♀ the wings are uniform dark brown above without distinct transverse bands; the forewing has the apex white and bears a narrow, hardly distinct yellow subapical band; the hindwing beyond the middle with a curved, anteriorly narrowed, blue transverse band; the under surface is strongly glossy, light slate-grey, scarcely tinged with greenish, the apex of the forewing and the narrow subapical band are white, the latter is continued posteriorly in a light oblique line as far as vein 7 of the hindwing. Sierra Leone to Cameroons.

The following five species are very similar above and beneath and agree in both sexes having on the forewing a sharply defined subapical band, yellow above, white beneath. The costal margin of the hindwing beneath is always white at the base. They have the peculiarity that the apex of the forewing is sometimes white in both sexes (*marimiana*, *flaminia*), sometimes only in the ♀ (*phantasia*, *phantasiella*), sometimes in neither ♂ nor ♀ (*nivaria*). The under surface is always bright green, often strongly glossy. Instead of repeating the same characters in each species I give here two synopses, by which the species can be at once easily determined.

#### Synopsis of the ♂♂.

- I. Apex of the forewing above not white or only with white fringes.
  - A. Forewing beneath uniform green, not darker at the distal margin and without dark markings. *E. phantasia*.
  - B. Forewing beneath at the distal margin more or less darkened, olive-green; the dark distal area with its proximal margin curved. Wings beneath at least in the cell with more or less distinct dark markings.
    - a. Wings above with the usual dark transverse bands very distinct. Smaller species, 50—55 mm. *E. phantasiella*.
    - b. Wings above deep black-brown without distinct black transverse markings. Larger species, 60—65 mm. *E. nivaria*.
- II. Apex of the forewing above white. Both wings above uniform black-brown without or with indistinct transverse bands, beneath light blue-green with darker markings in the cell and often also with darker transverse bands beyond the middle; between veins 7 and 4 of the hindwing a whitish transverse stripe.
  - α. The yellow subapical band on the upperside of the forewing only about 2 mm. in breadth and not reaching vein 3. Smaller species, 57—61 mm. *E. flaminia*.



- β. The yellow subapical band on the upperside of the forewing nearly 4 mm. in breadth and reaching at least to vein 3. Larger species, about 64 mm. *E. maximiana*.

#### Synopsis of the ♀♀.

##### I. Forewing above with white apex.

- a. Hindwing above with blue, green or violet median band, which is often also continued on the forewing to vein 2 or even further.

1. Forewing beneath uniform green. *E. phantasia*.

2. Forewing beneath at the distal margin darker, brownish; the dark part proximally curved. *E. phantasiella*.

- b. Hindwing above unicolorous dark brown. Under surface light blue-green and beyond the middle with 1—3 darker green transverse bands.

1. Under surface without distinct dark markings in the cells. Smaller, 64—80 mm. *E. flaminia*.

2. Under surface with distinct dark markings in the cells. Larger, 88—89 mm. *E. maximiana*.

##### II. Apex of the forewing above not white. Both wings above black-brown without dark transverse bands and without blue median band on the hindwing, beneath light grey-green, at the distal margin of the forewing and in the middle of the hindwing broadly dark green. *E. nivaria*.

*phantasia*. **E. phantasia** Hew. (41 a) is only distributed from Old Calabar to the Congo. The ♀♀ recall female forms of *Euphaedra medon*.

*phantasiella* **E. phantasiella** Stgr. occurs from the Cameroons to the Congo and has a broader subapical band on the forewing. — In *phantasina* Stgr. (41 a), from Sierra Leone and North Guinea to Lagos, the subapical band of the forewing is much narrower, only 1—2 mm. in breadth, and the distal area on the underside of the forewing is only a little darker than the basal part, but proximally curved.

*nivaria*. **E. nivaria** Ward (40 c) is a very rare species of large size; the under surface is very striking on account of the sharp contrast between the light green basal part and the dark green colour. Cameroons to the Kuilu River.

*flaminia*. **E. flaminia** Stgr. (40 e) recalls *Euphaedra spatiosa*, especially beneath, and has hitherto only been found in Old Calabar and the Cameroons.

*maximiana*. **E. maximiana** Stgr. is a very similar, but somewhat larger species, of which a few specimens were captured by Dr. PREUSS at the Barombi Station in the Cameroons and which is very little known as yet.

#### Fourth Group.

This small group is distinguished by the oblique band from the middle of the costal margin on the upperside of the forewing extending at least to vein 2. Somewhat before the apex there are usually also 2 or 3 yellow or white spots in cellules 5—7. The upper surface is brown-yellow to black-brown without any tinge of blue or green and the under surface never has the ground-colour green. In all the species the under surface has a common blackish transverse band, which is narrow at its commencement at the costal margin of the forewing near the apex, on the forewing is sharply defined and posteriorly not or but little widened, but on the hindwing is much widened, proximally not sharply defined, and terminates broadly at the middle of the inner margin.

*comus*. **E. comus** Ward (40 e) has the ground-colour of the upperside uniform dark velvety brown and only in the cell of the forewing and at the proximal side of the oblique band some indistinct black lines. The forewing is dark brown beneath, in the middle more or less yellowish with violet-grey transverse spots in the cell and at the costal margin and a whitish apical spot; the underside of the hindwing has besides the median band 4 or 5 dark transverse bands, all broadly margined with violet-grey. The light spots just before the apex of the forewing are in the ♂ tinged with yellowish above, in the ♀ pure white. Cameroons to the Congo.

*cinaethon*. **E. cinaethon** Hew. (40 e). In the ♂ the wings are lighter brown above with distinct submarginal line; the yellow transverse band of the forewing is very broad, the spots before the apex small and yellow; the apical part outside the transverse band is blackish; the markings of the under surface recall those of *comus*, but are a mixture of brown and grey without the bright violet colour of that species. The ♀ is similar to the ♂ above, but much darker, black-brown, and with somewhat narrower transverse band on the forewing; the under surface agrees almost entirely with that of *ikelemba* (41 e). In both sexes the dark submarginal line of the forewing is at least in cellules 1a—3 almost straight, neither undulate nor angled, only very weakly dentate. Gaboon and French Congo.

*ikelemba*. **E. ikelemba** Auriv. (41 e). Only the ♀ is known. This is very similar to the ♀ of *cinaethon*, but differs particularly in having the dark submarginal line of the forewing throughout strongly undulate or almost angled and above basally light-margined. The light yellow transverse band of the forewing is

narrow from the costal margin to vein 4, becomes broader in cellule 3, then bends round towards the hind-margin and reaches vein 1, but in cellules 2 and 1 b is divided by a transverse shade into two branches; hindwing above with traces of three lighter transverse lines; the under surface scarcely different from that of *cinaethon* ♀.

### Fifth Group.

The species of this group may be known at once by the markings of the under surface. This is quite similarly marked in all the species and only differs somewhat in the lighter or darker ground-colour. The hindwing beneath has a straight black-brown transverse band, 2—3 mm. in breadth, which extends from the anal angle (extremity of vein 1b) to the costal margin somewhat beyond the middle and is then continued on the forewing in a gentle curve as far as the apex, but is sometimes indistinct anteriorly; the submarginal line of both wings is distinctly though weakly undulate or dentate, before it a transverse row of black dots; before the transverse band on both wings an irregularly sinuous median line, which on the forewing runs almost as in *ikelemba* (41e); in the cell of the hindwing are placed 2 or 3 dark ring-spots and before them a similar ring in cellule 7; all these rings stand in a straight line; the ring-spot in cellule 7 otherwise occurs, but more indistinctly, only in the species of the fourth group; on the forewing there are also 3 dark rings in the middle of the cell and behind them 1 or 2 similar rings in cellule 1b. The sexes are very dissimilar above, the ♂ nearly always darker and with more distinct dark transverse bands: of the typical dark transverse bands the first is entirely absent or only weakly indicated; the second is well developed, at least on the forewing, and is sharply dentate at veins 4 and 5; the third is more or less indistinct, shadowy, and little darker than the ground-colour, but at the costal margin of the forewing much widened in cellules 5 and 6; the fourth always consists of free, rounded, often light-margined spots and the fifth forms a distinct submarginal line; between the second and third transverse bands there is at the costal margin of the forewing in the ♀ always a white subapical band and in the ♂ often a yellow one.

**E. theognis** Hew. (40 c). The wings in the ♂ uniform black-brown above with indistinct markings, *theognis*. only the second transverse band and some sinuous transverse lines in the cell of the forewing black and very distinct; the subapical band of the forewing wanting; the postdiscal spots of the forewing sometimes with indistinct yellowish rings. The ♀ is dark olive-brown above, at the apex of the forewing blackish; the subapical band in cellules 6—4 white and sharply defined, then in cellules 3 and 2 yellowish and not sharply defined; the postdiscal spots are small and bordered with white or yellowish dots; the hindwing yellowish beyond the middle as far as the submarginal line. Gold Coast.

**E. cocalia** F. (40 c). Both sexes are distinguished by the long and sharp teeth of the second transverse *cocalia*. line of the forewing on veins 4 and 5. In the ♂ the wings are dark red-brown or chestnut-brown above, with distinct black markings, only the third transverse band is scarcely darker than the ground-colour and hence only shows up at the costal margin of the forewing where it is light-bordered; the yellow subapical band of the forewing is very narrow (about 1 mm. in breadth) and is only present as a yellow bordering to the distal side of the second band in cellules 3—6; the postdiscal spots are large and rounded and at least on the forewing margined with orange. The ♀ differs from the other species in the light upper surface; the basal part is light brown-yellow and distally shades gradually into the whitish ground-colour of the distal half; the dark markings as in the ♂; both wings darkened at the distal margin. Cameroons to Congo.

**E. mardania** F. (40 c, d). In the ♂ the hindwing and the basal half of the forewing are dark red- *mardania*. brown and the apical half of the forewing blackish with broad, sharply defined yellow subapical band; the postdiscal spots are on the forewing more or less distinctly ringed with yellow or whitish and on the hindwing posteriorly indistinct; transverse bands 2 and 3 are suppressed or very indistinct in the red-brown part. In the ♀ the hindwing and the basal half of the forewing are brown-yellow and the apical half of the forewing black with broad white subapical band and white rings or marginal spots to the postdiscal spots; in the brown-yellow colour only the submarginal line and the postdiscal spots of the hindwing stand out distinctly. — Pupa glossy green with yellowish dorsal spine and transverse band on the third abdominal segment and small yellowish elevations on the following segments; spiracles black. Gold Coast to Angola and Uganda; common.

**E. senegalensis** H.-Schäff. (40 d) is very similar to the preceding species, but differs in the narrower *senegalensis*. subapical band of the forewing and in the ♀ also in the darker, dirty grey-brown or yellowish brown, ground-colour of the upper surface. Senegal and Sierra Leone. — **orientis** Karsch (40 d) has the ground-colour in both *orientis*. sexes orange, at the base yellow-brown, and bears a broader subapical band on the forewing. German East Africa.

### Sixth Group.

Wings beneath with a common, broad, dark transverse band, running from the apex of the forewing to the middle of the inner margin of the hindwing and very irregularly defined; frequently this transverse band is indistinct or scarcely more than indicated, but in the last species it is very sharply expressed. The species are large and are distinguished by having the ground-colour only present between the confluent black transverse bands of the forewing as separate light spots-white or whitish, rarely yellow. The sexes are similar.

**E. plistonax** Hew. (40 c). The hindwing and the basal part of the forewing are yellow-brown, the api- *plistonax*. cal part of the forewing black with narrow white subapical band, which is occasionally yellowish in the ♂,



and two transverse rows of white spots; the brown basal part is without markings or has some fine dark transverse streaks; the hindwing has a strongly undulate submarginal line and is more or less broadly darkened at the distal margin; the under surface is grey-brown, somewhat darker at the base, the markings indistinct; the subapical band of the forewing is represented by 3 or 4 free, almost silvery spots. The species strongly recalls *mardania* ♀ above. Lagos to Angola.

*arcadius.*

**E. arcadius** *F.* (40 b). The hindwing and the basal one-fourth of the forewing are very dark chestnut-brown above, with indistinct markings; the cell and the base of cellules (2) 3—6 are bluish green, the former with two black transverse lines; the entire distal part on the contrary is black with three transverse rows of large white spots, suffused with greenish; a greenish transverse streak is usually present also in cellule 7 of the hindwing. The under surface agrees almost entirely with that of *plistonax*. Sierra Leone to Gold Coast.

*staudingeri.*

**E. staudingeri** *Auriv.* (40 b) is the largest and also one of the most beautiful species of *Euryphe*. Beneath the ♂ agrees entirely with the ♀, which we figure here, but on the upperside it differs in having both wings brown, the spots of the forewing yellow and the subapical band of the forewing smaller and yellow; the hindwing is almost unicolorous, the dark markings being very indistinct. In the ♀ the forewing is deep black above with broad white subapical band, greenish white spots in the transverse rows and green transverse lines in the cell; the under surface is a delicate greenish grey with sharply prominent black-brown markings, the arrangement of which is best seen from the figure. Cameroons and Gaboon.

### Seventh Group.

This group, the characters of which have been given in the synopsis, embraces only a single species, which shows no close affinity with other species, but recalls *staudingeri* in the shape and position of the transverse band on the under surface.

*barce.*

**E. barce** *Dbl.* The under surface is light yellow, in places somewhat suffused with grey, and has rust-brown markings; from the apex of the forewing to the middle of the inner margin of the hindwing runs a broad rust-brown median band, gradually widened posteriorly, which is sharply, but on the hindwing somewhat irregularly defined; in the middle and at the apex of the cell of the forewing there are two broad rust-brown transverse bands, surrounded with lighter brown; a transverse streak in cellule 7 and three rings in the cell of the hindwing are also brown; the submarginal line is fine, blackish, and dentate in each cellule in the shape of a W. In the ♂ the greater part of the hindwing and the basal half of the forewing are bright blue-green above; the apical half of the forewing is black with narrow green subapical band; on the hindwing cellules 1 a and 1 b are black and there is a black marginal band, narrow in cellules 1 c—4, then rapidly widened. The ♀ is unknown to me, but is perhaps identical with the following form. Sierra Leone to the Niger. ♀-ab.

*achillaena.*

**achillaena** *Bartel* (40 b). The hindwing is light violet-blue above to beyond the middle and the forewing in cellules 1 a—3; the subapical band of the forewing is white, but very narrow, only 1 mm. in breadth; two transverse streaks at the apex of the cell of the forewing and the proximal part of the distal half of the hindwing are sometimes yellowish. Togo. — **maculata** *Auriv.* (40 a; as *barce*) is a local race inhabiting the Cameroons and French Congo, and differs from the typical form in having the subapical band of the forewing in the ♂ broader and light yellow or whitish and in the ♀ 5 mm. in breadth and nearly white; the ♀ has on the upperside of the hindwing a black marginal band with an almost uniform breadth of 6—7 mm., but otherwise nearly agrees with the ♂, thus differing greatly from *achillaena* ab.

### Eighth Group.

Hindwing above green or bluish green to the middle or beyond; forewing also often more or less suffused with greenish. Wings beneath without common median band, but at the base with distinct black markings at least in the cells. In the ♀♀ the apex of the forewing is white above. In these characters this group closely approximates to the genus *Euphaedra* and some species are so similar to those of *Euphaedra* that they have been described as such.

The first four species were only described from the ♂♂ and are unknown to me: I am therefore only able to repeat the original descriptions.

*chloeropsis.*

**E. chloeropsis** *Baker.* Both wings bronzy blue-green above; forewing with the base of the cell filled up by a black patch and beyond this with a narrow undulate dash, followed by two spots; the cell closed by a largish spot and the cellules beyond filled up with black for a short distance; this black colour is continued as a cloudy band to the hinder angle; a black spot in the basal part of cellule 2; apical part blackish with a small white spot at the apex. Hindwing with a broad black marginal band, with a greenish hue in certain lights. Beneath both wings are dirty greenish; the forewing at the base of the costal margin light bluish, with two spots in the middle and one at the apex of the cell, all outlined with black; an indistinct postmedian transverse stripe between vein 4 and the hindmargin; the apex with some small white spots; the hindwing with two dark rings in the cell and the inner margin with yellow hairs. Expanse 72 mm. Congo: Makala.



**E. luteola** Baker. Upper surface of both wings deep velvety blackish bronzy green; forewing beyond *luteola*. the cell and vein 3 somewhat lighter (yellowish) bronzy green; this lighter colour, however, reaches neither the base nor the distal margin; in the cell there are three dark spots, one at the base, one in the middle and a larger one at the apex; a yellowish oblique band between the costal margin and vein 5, terminating in cellule 4 with a yellow patch; the apex usually with a small yellow spot; an indistinct row of dark submarginal spots; on the hindwing the bronze-green colour often extends nearly to the distal margin; a trace of a dark submarginal line. Beneath both wings olive-green with all the markings of the upper surface more or less showing through; the base of the costal margin of the forewing is light bluish white to the middle of the cell; the forewing with dark, sometimes obsolete submarginal spots; the hindwing with three black spots in the cell and a white transverse spot at the middle of cellule 7; the postdiscal spots and the submarginal line dark but not sharply defined; cellules 1 a—2 more or less suffused with yellowish. Expanse 77 mm. Congo.

**E. makala** Baker agrees with the followish species above, except that the narrow oblique band of the *makala*. forewing has developed into a broad subapical patch extending to beyond vein 3. The under surface of both wings brownish olive-green with the markings of the upper surface showing through; in the cell four dark-ringed spots and beyond the middle traces of two dark transverse bands and of the submarginal line; the hindwing with three sharply outlined black dots in the cell and with indistinct traces of a median band and a submarginal line. Expanse 89 mm. Makala, Congo region.

**E. leptotropa** Baker has both wings black above with pale steel-blue suffusion; the suffusion on the *leptotropa*. forewing confined to the posterior part and anteriorly bounded by vein 3, not extending to the base nor the distal margin; the subapical band is white, reaches vein 5 and is accompanied in cellule 4 by a bluish white spot which extends nearly to the distal margin; the apex with small white patch; the hindwing is blue with a broad marginal band of uniform breadth. The under surface is uniform light bronzy green; the forewing with the markings of the upperside indistinct; the hindwing with a whitish angled dash in cellule 7 and with indistinct dark submarginal line and postmedian band. Expanse 86 mm. Congo region, at Beni-Mawambe.

**E. cutteri** Hew. (40 a ♀; not ♂, see below). In the ♂ both wings have the ground-colour on the upper- *cutteri*. side almost uniform blackish; the subapical band of the forewing is about 5 mm. in breadth, yellow, reaches at least to vein 3 and from vein 5 onwards is broken up and almost parallel with the distal margin, in cellule 3 and in cellule 4 it usually encloses a small dark spot; in cellules 1 a and 1 b is placed a green hindmarginal spot, which, however, extends little if at all beyond the middle of the hindmargin and encloses 2 or 3 black spots; the hindwing is bright green from the base to a black marginal band of 6 mm. in breadth, with some small black spots in and at the cell; cellules 1 a and 1 b are black-grey with dense, long hairs. Beneath both wings are dull grey-green, at the hindmargin of the forewing brownish and at the inner margin of the hindwing broadly suffused with ochre-yellow as far as vein 2 or 3; the cells bear black spots or transverse streaks and cellules 1 b—6 of the forewing black, often triangular basal spots; in each cellule from 5 to 7 of the hindwing are placed two black spots separated by a whitish or light green transverse spot; the outer series may be regarded as discal spots; the discal spots of the forewing are absent or are only indicated in cellules 1 b—3; near the distal margin of both wings a distinct row of black, sometimes very thick submarginal streaks; the subapical band of the forewing is light yellow and only reaches vein 4; the extreme apex of the forewing beneath white. The ♀ is larger with the forewing longer and only differs in having the apex of the forewing white above also, the subapical band of the forewing broader and the under surface lighter with thicker black markings. Liberia to Cameroons. — The ♂ figured on pl. 40 differs so considerably from the typical ♂ that it deserves a separate name. **fasciata** form. nov. (40 a as *cutteri* ♂) differs in the male in that *fasciata*. the green hindmarginal spot of the forewing almost reaches the distal margin and is connected with the subapical band by a green spot in cellule 2, the black marginal band on the upperside of the hindwing is only 2 mm. in breadth and the discal spots of the under surface are large and sharply defined and form a median band extending from vein 4 of the forewing to vein 2 of the hindwing. Cameroons.

*E. cutteri* seems to be extremely variable and the following three recently described species, which are unknown to me, are perhaps also only forms of it.

**E. cognata** Grünb. is allied to *innocua* and *cutteri*. Upper surface velvety black as in *cutteri*, only *cognata*. at the anal margin of the hindwing dark brown; hindmargin of the forewing and central area of the hindwing bright blue-green; the very sharp black markings on the upperside of the hindwing in *innocua* only indicated by a small spot in the cell; subapical band essentially as in *innocua*, interrupted at vein 5, posteriorly broken off before vein 3, the reddish tinge somewhat weaker than in *innocua*. Ground-colour of the under surface as in *innocua*, dull blue-green to olive-green; base and anal area of the hindwing ochre-yellow; the black markings very intensive and compact, the centre scarcely lighter than the circumference; the black discal band sharp, on the forewing with the pointed end extending to beyond vein 4, on the hindwing likewise reaching vein 4; the separate spots entirely fused into a homogeneous band and essentially sharper than in *cutteri*; subapical band on the forewing yellowish, as in *innocua*, 4 mm. in breadth; the black subapical spots as in the allied species. Expanse 61 mm. Cameroons: Bibundi.



*tessmanni*.

**E. tessmanni** Grünb. is also most nearly allied to *innocua* and *cutteri*. In the ♂ the upper surface is dark olive-brown, entirely without marginal band, the black markings and spots similar as in *innocua*; the markings in the cells only developed as streaks and rings; the brown-yellow subapical band of the forewing less sharp, particularly in the middle part indistinct and without sharp boundary, the distal part between veins 5 and 3 most distinct, but without black central spots. Under surface brown tinged with olivaceous, the basal half of both wings strongly watered with pale blue; of the black markings in the cells only the fine boundary-lines are present, the centre is scarcely darkened; the markings outside the cell are wanting; the light subapical band of the forewing is only developed in the anterior part and disappears immediately behind vein 6; the white apical spot of the forewing rather small; the narrow white streak between veins 7 and 8 of the hindwing sharp and distinct. The ♀ very similar on the upperside to that of *cutteri*, the yellow subapical band of the forewing narrower, between veins 5 and 6 4—4.5 mm. in breadth; median area of the hindwing with blue-green reflection, at the middle beyond the cell yellow. Under surface like *cutteri* in tone of colour, the black markings in the cells and on the discoidal veins less compact, thickly margined with black, but filled in with lighter; the spots of the short black discal band on the hindwing present, somewhat weaker than in *cutteri*, on the forewing entirely absent; subapical band of the forewing only 4 mm. in breadth and white, not yellow as in *cutteri*; the submarginal spots in both wings smaller and less sharp. Expanse 58 (♂) — 67 (♀) mm. Spanish Guinea, at Alcu.

*intermedia*.

**E. intermedia** Bartel is quite near to *innocua* and has only been described in the male. Forewing quite similar in colour and markings to that of *cutteri*, but the light scaling at the costal margin, the base of the subdorsal vein and the inner margin not blue-green but more yellow-green, also much more extended at the latter, nearly reaching vein 2; the outer of the two black streaks in cellule 1 b of *innocua* is very thin and scarcely represented by more than two black dots; the yellow subapical band is broader, reaching nearly to the middle of cellule 2; hindwing differing from that of *innocua* in having the entire median part next to the basal area bright yellow-green, almost golden green; the thick black streak at the discocellular is entirely absent and the one placed behind it very faint; spots in the cells similar to those of *innocua*. On the under surface of the forewing the apex is somewhat more broadly scaled with whitish and the anterior part of the yellow band very light, almost whitish; the posterior part is very faint, scarcely showing at all; the black streak in the cell before its end is not straight, but bicurved and very sharply pointed basally; the black marking before the distal margin is very indistinct, scarcely visible; the colouring of the distal area, as also of the hindwing, is more dirty clay-yellow; this colour shades on the hindwing into that of the inner-marginal part, which is dirty ochreous, not bright ochre-yellow; green tones are very restricted on the hindwing, on the other hand the bluish colouring is more prominent; the light spot in the cell is broader, proximally more narrowly, distally more broadly bordered with blackish, the dark colouring here continued more distinctly posteriorly; the short black streak beyond the cell is very strong, more rectangular; the blackish submarginal band is weakly expressed throughout; it is also much further removed from the distal margin than in *innocua*; the posterior part of the distal margin is lightened with bluish white scales; these are strongest in the lowest part before the inner angle, which appears rather extended bluish, intersected with dark. The hindwing is much broader in proportion than in *innocua*; the inner angle is not pointed, the margin being much rounded off at veins 2 and 1 b. A good distinguishing mark is also furnished by the club of the antenna, which is not unicolorous black above, but brown before the tip. Expanse 57 mm. Cameroons: Barombi Station.

*innocua*.

**E. innocua** Sm. & Kirby is similar to the ♂ of *cutteri*, but the upper surface lighter, with black-brown ground-colour and hence with the dark transverse bands or transverse rows of spots standing out rather distinctly; the hindwing is bluish green from the base to beyond the middle, with some black spots in and behind the cell; the forewing at the base and hindmargin only indistinctly greenish; the under surface in the basal part bluish green with black spots, in the distal part blackish brown and at the inner margin of the hindwing yellowish; the black discal spots absent or very indistinct; the submarginal line is placed close to the distal margin, but is fine and very indistinct. Lagos to Cameroons.

*eliensis*.

**E. eliensis** Hew. In the ♂ both wings are dark green above with narrow dark marginal band, about 3 mm. in breadth; the forewing with light yellow subapical band, posteriorly somewhat indistinct, and black apex; at the hindmargin a light green half-band 10—11 mm. in breadth, reaching vein 3; the cell of the forewing with 2 or 3 black transverse spots, that of the hindwing with two black dots. The under surface is dark tawny with black ring-spots in the cells but without dark discal spots; the forewing with white subapical band and white apical spot; the hindwing with whitish transverse streaks or transverse spots in the middle of cellules 5—7; both wings with dark brown submarginal line. The ♀ is larger and lighter. Gaboon to Kuilu.

*chilonis*.

**E. chilonis** Hew. In the ♂ the wings are black above with dark violet or purple reflection and narrow black marginal band; both wings with common bright green median band 9—14 mm. in breadth, extending from vein 3 of the forewing to vein 1 b of the hindwing and becoming broader posteriorly; the subapical band of the forewing bright yellow and sharply defined but short, only consisting of three spots



in cellules 4—6; the apex of the forewing white on both surfaces and the cell of the forewing with two blue transverse streaks. The under surface is bright grass-green and only spotted with black in the cells; the subapical band of the forewing as above, only somewhat broader; the hindwing with yellowish transverse streak in cellule 7; the submarginal line indistinct, brownish. The ♀ is unknown to me. This rare species is only known from Gaboon and the Ubangi River.

**E. barombina** *Stgr.* (44 d) is similar to the preceding species, but differs in having the subapical band *barombina*. of the forewing entirely absent in the ♂ and in the ♀ only represented by a small yellowish spot near the base of cellules 5 and 6; the green median band is narrower and reaches vein 4 of the forewing; the under surface is darker, greyish green, with two indistinct transverse rows of dark spots in the distal part, but without submarginal line; the white spot at the apex of the forewing very large in the ♀. This species is also rare and is only found at the Barombi Station in the Cameroons.

**E. octogramma** *Sm. & Kirby* is a beautiful and easily recognized species, differing from all others in *octogramma*. having the broad black marginal band on the upperside of the hindwing ornamented with a row of 7 elongate blue-green submarginal spots. Both wings green above, at the base bluish, with black marginal band, gradually widening posteriorly and at the anal angle of the hindwing about 12 mm. in breadth; the base of the forewing with 5 deep black spots, two in the cell, one at its apex and two oblong ones at the base of cellule 1 b; the hindwing only with two thick black spots, one in the cell and one at its end; the wings uniform yellow-green beneath with black submarginal streaks and at the base the same spots as above, but small and light-centred, ring-shaped. Cameroons.

**E. rubrocostata** *Auriv.* differs from all other *Euryphene* species in the light red spot at the base of the *rubrocostata*. costal margin on the hindwing beneath, and is also otherwise quite distinctively marked. Both wings brown above, somewhat tinged with yellowish and in the apical part of the forewing blackish; the hindwing is suffused with dull greenish (♂) or bluish nearly to the distal margin and the forewing to the apex of the cell; this colour shades distally into the ground-colour without sharp demarcation; the forewing with yellow subapical band about 4 mm. in breadth, extending from the costal margin almost to the middle of cellule 3; the apex of the forewing is in the ♂ black above, with light fringes, in the ♀ broadly white. The under surface is in the ♂ grey-yellow with 2 or 3 round black dots in the cells; the light basal area is bounded on both wings by a broad, irregular, dark brown transverse band, projecting distad in cellules 3 and 4; in the light distal part there are two dull brown transverse bands, the proximal one forming a large quadrate dark brown spot at the costal margin of the forewing. The ♀ differs on the underside in having the ground-colour whitish, but almost entirely suppressed by the much widened, connected black-brown transverse bands with somewhat greenish gloss; the subapical band of the forewing is white and on the hindwing the dark boundary-line of the basal area is distally sharply marked by a broad white transverse band of the ground-colour, which is sharply angled at vein 4 and often interrupted in cellule 3. Hitherto only found in the Congo region on the Sankuru River.

#### 10. Gattung: **Euphaedra** *Hbn.*

As has been already mentioned, this genus entirely agrees with *Euryphene* in neuration and only differs in the bright orange colour of the palpus.

The *Euphaedra* are large, powerfully built butterflies and have usually a darker, blackish or brown, ground-colour above, with blue or greenish reflections, and a greenish under surface; occasionally the ground-colour is yellow to orange. In the cells there are usually, at least on the under surface, 1—3 sharply defined black dots or spots; the forewing has nearly always a light (yellow, white or green) subapical band above.

The sexes differ but little; the ♀ is larger than the ♂ and has sometimes a lighter subapical band on the forewing.

Several species or forms are noted for their extraordinary variability, whilst others hardly vary at all. As usual a whole series of species were formerly erected on the variable forms, but as these so-called species are connected by numerous transitional forms it is almost certain that we are here dealing with only some few species. This interesting question can only be conclusively solved by breeding from the larvae. Perhaps in this way quite as remarkable discoveries may be made as in the breeding of *Hypolimnias dubius-anthedon*.

The larvae are very similar to those of the Indian genus *Euthalia* and have along each side of the dorsum a row of long, finely branched (often almost feathery) spines, which do not stand erect, but spread out almost horizontally towards each side. The pupae agree almost entirely with those of *Euryphene*.

Like the other *Nymphalinae* this genus also has its headquarters in the West African forest-region, where it is represented by numerous species. Single species, however, extend to Uganda and Abyssinia and one occurs in East Africa and southwards to Delagoa Bay. The dark species are said to fly especially in the most shady places in the primeval forests.

The numerous forms may be divided into five groups.



## Synopsis of the Groups.

- I. Forewing above at most with a light transvers band before the apex and always without light median band.
  - A. Hindwing above broadly unicolorous (brown, blue, violet or green) at the distal margin without a trace of submarginal spots and beneath also with these spots wanting or only dull and indistinct
    - a) The light subapical band on the upperside of the forewing is very broad, bright orange and posteriorly extends into cellule 2 or even reaches vein 2. 1. *Neophron* Group.
    - b) The light subapical band on the upperside of the forewing is narrower or sometimes indistinct and posteriorly reaches at most to vein 3; it is white, light green or yellow. 2. *Medon* Group.
  - B. Hindwing above with distinct submarginal spots before the distal margin, and nearly always also with these spots beneath.
    - a) The marginal band of the hindwing above with bluish, green or black submarginal spots and beneath usually with black ones. 3. *Ceres* Group.
    - b) The hindwing with white or yellowish spots in the dark marginal band. Thorax and abdomen with distinct paired white spots above. 4. *Eleus* Group.
- II. Forewing with two white or yellow transverse bands, one before the apex, the other beyond the middle, composed of 2 or 3 spots (in the cell and in cellules 2 and 3). Hindwing above red or orange with broad black marginal band. 5. *Perseus* Group.

1. *Neophron* Group.

The species of this group may be easily known by having the upperside of the hindwing and the basal part of the forewing to the beginning of vein 3 similarly coloured, the apical part of the forewing on the other hand black with broad orange subapical band and yellow apex. The under surface is dark brown, grey-brown or yellowish with 1—3 black dots in the cells, lighter (♂) to whitish (♀) median band and oval, not very distinct postdiscal spots. The subapical band of the forewing shows through faintly.

*neophron*.

**E. neophron** *Hpffr.* (45 c, d). The orange subapical band of the forewing reaches vein 2 or even extends somewhat into cellule 1b; the basal part of the forewing and the whole upperside of the hindwing are bright green or blue-green with dark marginal band. Larva according to JUNOD green with two large golden yellow spots on each segment. Delagoa Bay to Usambara. — **violacea** *Btlr.* is somewhat larger and differs in having the hindwing and the basal part of the forewing above of a beautiful violet colour and in the subapical band of the forewing not reaching vein 2; the under surface is darker than in *neophron*, particularly in the ♀. Pupa light green with golden spots. Kilimandjaro and British East Africa.

*violacea*.*ellenbecki*.

**E. ellenbecki** *Pag.* entirely agrees with the preceding species in the markings, but is smaller and the hindwing and the basal part of the forewing are brown-yellow above, and but little darker than the subapical band of the forewing. Abyssinia.

2. *Medon* Group.

The species of this group only agree in having the submarginal spots of the hindwing entirely absent on both surfaces, or at least above. They may be easily distinguished by the following synopsis.

- I. Hindwing beneath not red at the base of the costal margin.
  - A. Hindwing above unicolorous olive-brown to black-brown in the basal part at least to beyond the end of the cell. Forewing with white apical spot.
    - a) Hindwing above without blue transverse band, at most with a more or less violet or coppery reflection at the anal angle. Forewing always with yellow subapical band.
      - \* Hindwing above without purple gloss at the distal margin. The cells beneath usually only with one black dot.
        1. Hindwing beneath without white transverse band but beyond the middle with two transverse rows of large, almost confluent dark green submarginal spots. *E. spatiosa*.
        2. Hindwing beneath with a white median band, sometimes broken up into spots, extending from the costal margin to vein 4, and beyond the middle with only one transverse row of darker spots or one transverse band. *E. losinga*.
      - \*\* Hindwing above at the distal margin with violet or purple gloss, beneath light whitish blue-green with distinct white median transverse band between the costal margin and vein 4. The cells beneath with three black dots. *E. wardi*.
    - b) Hindwing above beyond the middle with a sharply defined blue transverse band, which is widened at the anal angle, reaching the distal margin. The subapical band on the upperside of the forewing in the ♂ very narrow or indistinct.
      1. Hindwing beneath without white median spots. *E. harpalyce*.
      2. Hindwing and usually also the forewing beyond the middle with a transverse row of sharply defined white spots. *E. eupalus*.
  - B. Hindwing above in the ♂ unicolorous green, blue-green, or to beyond the middle deep blue, in the

♀ at least in the middle and beyond the end of the cell blue, violet or greenish. The apex of the forewing is in the ♂ not white above, or at most with white fringes.

a) The subapical band of the forewing is only 1—2 mm. in breadth, does not reach vein 3 and consists of four free or nearly free white or whitish yellow spots.

1. Hindwing beneath without white longitudinal streak at the costal margin. The base and hindmargin of the forewing and the hindwing, at least in the middle, bright blue (♂) above, or at least tinged with bluish. *E. uganda*.

2. Hindwing beneath sometimes with a white longitudinal streak near the costal margin, beginning at the base and in cellule 7 almost reaching the apex. On the upper surface the basal part of the forewing and the hindwing to the distal margin are uniform dark green. *E. peculiaris*.

b) The yellow, greenish or occasionally white subapical band on the upperside of the forewing is 3—4 mm. in breadth, continuous throughout and posteriorly bounded by vein 3; in the ♂ it is sometimes indistinct. Forewing in the ♀ with white apical spot above. Wings beneath with three sharply prominent black dots in the cells and usually also with dark submarginal spots. *E. medon*.

II. Hindwing beneath at the base of the costal margin red. Forewing in both sexes with large white apical spot above. *E. luperca*.

*E. symphona*.

*E. imperialis*.

**E. spatiosa** Mab. (45 e). Both wings above uniform dark olive-brown, in the apical half of the forewing blackish with yellow subapical band and white apical spot. The under surface is green with one black dot (occasionally 2 or 3) in the cells and two dull, dark, not very distinct transverse bands beyond the middle; the subapical band of the forewing only shows through faintly. The ♀ may attain an expanse of 100 mm. and is the largest of all the *Euphaedra* species. Cameroons to the Congo and Uganda. *spatiosa*.

**E. losinga** Hew. (45 b, e) entirely agrees with *spatiosa* above, but differs beneath in the hindwing having in the middle a narrow, sharply defined white transverse band, beginning at the middle of the costal margin and reaching vein 4 or 3; beyond the middle of both wings runs a single dark transverse band, which, however, is often more distinct than the transverse bands in *spatiosa*; the subapical band of the forewing is white and sharply defined beneath, at least in the anterior part; the cell of both wings beneath with 1—3 black dots. Cameroons, Congo, Angola. ab. **impunctata** Bartel only differs in having no black dots in the cells beneath and the white median band of the hindwing only represented by a spot in cellule 7. South Cameroons. — **inaequabilis** Thurau has the subapical band of the forewing narrower, above deeply incised proximally at veins 4 and 5 and beneath broken up into spots; the white median band on the underside of the hindwing is also broken up into spots. Uganda. *losinga*, *impunctata*, *inaequabilis*.

**E. wardi** Druce (44 d) is very similar to the two preceding species above, but differs in having a violet or coppery reflection in the anal area. Beneath both wings are bright light green or bluish green, each with three large black spots in the cell and the forewing with a continuous, sharply defined white subapical band; this is usually finely bordered with black basally; the hindwing bears a rather broad white median band, which is often basally margined with black. Old Calabar and Cameroons. *wardi*.

**E. harpalyce** Cr. (45 b). Both wings above uniform black-brown, with small white apical spot on the forewing and a bright blue transverse band on the hindwing, which is broad at the anal angle, anteriorly becoming narrower terminates at vein 6 or 7 and is sometimes continued more or less far on the forewing also. The under surface is rather uniform light green or grey-green with 1—3 black dots in the cells. In the type-form the subapical band of the forewing is entirely absent in the ♂ and very narrow and yellowish in the ♀. Sierra Leone to Cameroons. In ab. **lakuma** Btlr. the subapical band of the forewing is very narrow in the ♂, but in the ♀ 4—5 mm. in breadth. Among the type-form. *harpalyce*, *lakuma*.

**E. eupalus** F. (45 b) is quite similar above to the preceding species, but differs beneath in both wings or at least the hindwing having in the middle a curved transverse row of free white spots, usually bordered with black proximally. Sierra Leone to the Congo. *eupalus*.

**E. uganda** Auriv. is a beautiful species, somewhat recalling *preussi* (42 d) above. Both wings above blackish with bluish gloss; in the ♂ the base of the forewing as far as vein 2, the hindmargin to beyond the middle and the costal margin to the cell, together with the hindwing to far beyond the middle, are a beautiful and intensive blue, in the ♀ these parts are faintly dark violet and only bluish in the middle; the subapical band of the forewing is narrow and consists of five white, bluish-edged spots. The under surface is light bluish grey-green with 1—3 black spots in the cell of the forewing and a white median band on the hindwing, composed of rounded spots and sometimes little distinct, extending from vein 7 to vein 3. Uganda. *uganda*.

**E. peculiaris** Lathy. In the ♂ the basal part of the forewing above as far as the apex of the cell and



almost to the hinder angle is glossy dark green, with two spots in the cell and a transverse spot at its apex black; the apical half is blackish with a narrow gold-yellow subapical band of 4 spots and a green reflection outside the band; the hindwing is unicolorous dark green above; the forewing at the apex with white fringes. Both wings beneath yellowish green; the forewing dark grey at the hindmargin, with three black dots in the cell and instead of the subapical band with three small, free white spots in cellules 4—6; hindwing with two black dots in the cell and in the middle with a transverse row of 4 small white spots in cellules 4—7. As ♀ LATHY describes and figures a form which seems to agree fully with *losinga* v. *inaequabilis* Thureau. He describes it as having the forewing above dark olive-brown; the apical half black with golden-yellow subapical band and white apical spot; hindwing above dark olive-brown; forewing beneath green, at the hindmargin grey, with two black dots in the cell and four whitish spots instead of the subapical band and with an indistinct dark submarginal band; hindwing beneath green with a black dot in the cell, an interrupted white median band and an indistinct dark submarginal band. If this ♀ really belongs to the ♂ the species *albovittata*, must retain the older name of *inaequabilis* given by THURAU. Uganda. ab. **albovittata** ab. nov. differs in the ♂ in having the subapical band of the forewing still narrower, quite straight and on both surfaces complete and nearly continuous and in the underside of the hindwing bearing near the costal margin a white longitudinal stripe, starting from the base and extending along cellule 7 nearly to the apex. Uganda: Sesse Islands.

**E. medon** was the first known species of *Euphaedra* and was described by LINNÉ as long ago as 1763. It is rather variable in colouring, particularly the ♀, and recalls some forms of the *Ceres* group. In the ♂ both wings are glossy green or bluish above, but at the distal margin more or less broadly blackish; the forewing is also broadly black inside the subapical band and has 2 or 3 black spots in the cell; the subapical band of the forewing is broad and reaches vein 3; beneath both wings are green with dark green submarginal band, 3 large black spots in the cell and a white median band on the hindwing, often broken up into spots or even indistinct; above the apex of the forewing has white fringes, but no spot. The ♀ is much larger and has a white apical spot on the forewing and a very broad dark brown or blackish marginal band on the hindwing. — **medon** L. (45 a). In the ♂ the hindwing is uniform green or bluish above and the subapical band of the forewing yellow, or light bluish tinged with green and in the ♀ the hindwing almost from the base to beyond the middle and the hindmargin of the forewing are bright blue-green or bluish; the subapical band of the forewing is bright yellow. Sierra Leone to Angola. ♀-f. **agnes** Btlr. (45 a) differs in having the hindwing and the hindmargin of the forewing violet-brown above, with a light blue or violet-blue median band about 7 mm. in breadth; the subapical band on the upperside of the forewing is yellow or white. Sierra Leone to Cameroons. ab. **viridinotata** Btlr. has in the middle of the hindwing above a large greenish yellow spot in the green or bluish area. Gaboon and Congo. ♀-ab. **fernanda** Fruhst. differs from *viridinotata* in the larger white apical spot of the forewing and the much narrower yellow subapical band; the under surface is darker than in *viridinotata*, the white median band is more sharply expressed and the black submarginal band much widened. Fernando Po. ab. **albula** Thureau has in both sexes a white subapical band on the upperside of the forewing and the under surface is clay-yellow; in the ♀ the upperside is chocolate-brown with violet reflection; the hindmarginal area of the forewing as far as vein 2 and the median area of the hindwing are bluish violet. Guinea. As **fraudata** THURAU describes a ♂ from Uganda as follows: "The subapical band of the forewing is strikingly narrow, at the costal margin only about 2 mm. in breadth, at the constriction on vein 4 about 1 mm". Probably belongs to *peculiaris*.

**E. luperca** Hew. In the ♂ the wings are blackish above, in the basal part of the forewing to vein 2 and at the hindmargin nearly to the anal angle dark greenish blue and on the hindwing except at the costal and inner margins with a greenish blue reflection almost to the distal margin; the subapical band of the forewing is white or light yellow (= ab. **luteofasciata** Bartel), with an almost uniform breadth of about 3 mm., quite straight, and nearly reaching the distal margin at vein 4, also forming a small spot in cellule 3. The under surface is lighter or darker green, at the hindmargin of the forewing dark violet-brown and at the inner margin of the hindwing yellow-haired as far as vein 2; the forewing with three black spots placed in a straight line, two in the cell, ringed with light green, and the third at its apex; the hindwing likewise with three black spots, one just at the base in cellule 8 and two in the cell; on the forewing the costal margin to the apical band, the band itself and the apical spot are pure white; on the hindwing the base of the costal margin is blood-red and posteriorly bounded by a snow-white stripe, which follows vein 8 and somewhat beyond the middle of the costal margin unites with a white transverse band; this transverse band is feebly curved basewards and reaches vein 4 or 3 not far from the distal margin. In these beautiful markings the under surface of this species differs from all others. The typical ♀ is unknown to me and has never been described, but perhaps differs but little from the ♂. Old Calabar to the Congo. ab. **variegata** ab. nov. (45 a as *luperca*) only differs in having the hindwing above to beyond the middle and the forewing in the basal part of cellules 1a—2 dark olive-brown without blue reflection; the blue colour is consequently confined to the broad marginal band of the hindwing and the hinder angle of the forewing; the subapical band of the forewing is brighter yellow than in the type-form. Intermediate forms occur in which the blue colour is more extended. Congo.



**E. imperialis** *Lindemans*. The very beautiful ♀ on which this species is based closely approaches *imperialis*. *E. luperca* (45 a). Whether it is only a form of this or an independent species can only be decided by comparing larger material. Both wings blackish above, the basal part tinged with dark green to beyond the middle; the subapical band of the forewing is about 6 mm. in breadth, bright ochre-yellow, and reaches vein 4, but is then continued by a band running parallel with the distal margin at a distance of about 8 mm.; this band is orange-yellow in cellules 3, 2 and the anterior part of cellule 1 b and bluish at the hindmargin; on the hindwing it is continued by a somewhat narrower blue transverse band nearly to the anal angle; the fringes of the hindwing are pure white; the under surface is light bluish green and marked almost exactly as in *luperca*, only differing in having the white subapical band of the forewing connected with vein 1 by a white transverse line and in the broad white transverse band of the hindwing being quite straight and hence at vein 4 nearly 9 mm. from the distal margin. The white apical spot of the forewing large on both surfaces. Cameroons.

**E. symphona** *Baker*. The description runs: "♂. Palpi ochreous below, with a dark lateral stripe, *symphona*, fringed palely with longish hair above; head blackish, with two whitish dots below the antennae and two larger ones above: eye-sockets edged with white. Both the wings deep bronzy green, much deeper in tone near the termen: primaries with the area between the cell and apex darker, with an irregular oblique white stripe from vein 8 to just beyond vein 4, a small white patch at the apex; fringes with fine, short, white internervular intersections. Underside: both wings dull sienna-brown: primaries with two black spots lengthwise in the cell and a small one closing its upper extremity; all the white marks of the upperside show through: secondaries with two black spots in the cell and one at the extreme base, all in line; area above vein 8 crimson, below which to the lower margin of the spots is an indefinite patch of pale greyish, with a trace of the usual pale-angled dash between veins 7 and 8 about midway along the former. There is the least trace of a row of subterminal spots in a very slightly paler subterminal area in both wings." I have since had an opportunity of examining a specimen of this interesting species and find that it belongs to the genus *Euryphene* and is nearly allied to *rubrocostata* *Auriv.*, with which it also agrees in the colour of the palpi. Congo region: Beni Mawambe.

### 3. Ceres Group.

In the forms of this group the upper surface of the hindwing usually bears a row of large, rounded, black, more or less sharply defined submarginal spots (cf. the figures on plate 43); occasionally these spots are green or bluish. The under surface is usually characterized by sharply marked black discal and submarginal spots; only in a few extreme forms these spots are indistinct or entirely absent, so that these approximate to the species of the preceding group. The variability of the forms reaches its maximum in this group and it is possible that we are only dealing with 3 or 4 actual species. In order to facilitate the determination of the numerous forms they may be divided into three subgroups.

#### First Subgroup.

Hindwing beneath with a broad red longitudinal stripe at the costal margin, which extends to beyond the middle of the wing and also covers a larger or smaller part of cellule 7. Occasionally the red colour covers a great part of the hindwing.

**E. xypete**. The apex of the forewing on both surfaces white for a breadth of 2—5 mm.; the submarginal spots of the under surface are more or less completely divided in two and placed only 2—4 mm. from the distal margin; the red costal stripe on the underside of the hindwing never entirely covers the base of cellule 7; the wings above with blackish ground-colour. — **xypete** *Hew.* (44 b). The under surface of the hindwing *xypete*, broadly suffused with red not only at the costal margin but also in the middle between veins 2 and 7; the subapical band of the forewing is light yellow or whitish, edged with bluish, reaches vein 3 and is posteriorly not at all or but little widened; base and hindmargin of the forewing more or less extended blue-green; the hindwing shining blue-green above with broad blackish marginal band, in which the deep black submarginal spots often only stand out distinctly in certain lights. Under surface with sharply expressed black submarginal spots; forewing with three or four black spots in the cell and large black discal spots at the proximal side of the subapical band; hindwing only in the cell and at the base of cellules 4—6 (—7) light green with black spots, otherwise bright red, at the inner margin yellow and at the distal margin light green to yellowish green with black marginal line. Sierra Leone to Angola. — **mirabilis** *Bartel* only differs in having the scarlet colour *mirabilis*, on the underside of the hindwing confined to the costal part and not reaching beyond vein 7; the middle of the hindwing beneath is yellowish green. Cameroons. — **bombeana** *Strand* is similar to the preceding form, *bombeana*, but the subapical band is whitish, broader, and posteriorly more widened (6 mm. in cellule 4 nearly 10 mm. in breadth). Cameroons. — In **crockeri** *Btlr.* the subapical band of the forewing is indistinct and not differing from the ground-colour; the hindwing beneath is only red at the costal margin, the red colour not extending posteriorly beyond vein 7; the ground-colour of the under surface is yellowish green, at the termen distally to the black submarginal spots dark brown. Ashanti and Niger. — **crossei** *E. Sharpe* (= *aureofasciata* *Lathy*) *crossei*, differs from *crockeri* in having on the forewing a broad gold-yellow subapical band and a greenish hindmarginal spot, yellowish in the middle. Niger. — **caerulescens** *Smith* (44 a, as *gausape*) approaches the form *crockeri*, *caerulescens*, but has the subapical band of the forewing light bluish, posteriorly widened and often reaching vein 2, the



ground-colour of the under surface light bluish, and on the hindwing a narrow red costal stripe, usually not reaching vein 7. Congo.

*karschi*. **E. karschi** *Bartel*, like *xypete*, has a white apical spot on the forewing and the greater part of the hindwing beneath red; the subapical band of the forewing is whitish, very narrow (about as in *preussi*) and sharply defined; it consists of 3 small anterior spots and a large one, placed more distally, in cellule 3. On the underside of the forewing the subapical band is white and proximally only narrowly bordered with black; the under surface of the hindwing coloured and marked almost exactly as in the typical *xypete*. Probably only a form of the latter. North-West Cameroons.

*herberti*. **E. herberti** *E. Sharpe* (44 b) is a very distinct species. The submarginal spots of both wings are small, placed further (5—6 mm.) from the distal margin and united into a continuous line above; the white apical spot of the forewing is very large; the subapical band in the ♂ narrow, yellowish and little distinct, in the ♀ broader and whitish and the upper surface entirely or for the most part lighter green, grey-green or yellowish green. The under surface differs from all the other forms of the subgroup in the weak development of the black markings; the dots in the cell are small or entirely absent, as are also the black discal spots; the subapical band of the forewing is only indicated and the submarginal spots, although distinct, are small and not deep black; the red costal band of the hindwing is not very sharply marked, is bounded before the middle by the black-edged vein 8, but at and behind the middle is extended and covers a part of cellule 7 (in the figure this is unfortunately too weakly indicated); the ground-colour of the under surface is light bluish green and at the distal margin more or less darkened. In the weakness of the markings on the under surface this species corresponds to such forms as *eberti* and *sarita* in the other two subgroups. Congo, rare.

*gausape*. **E. gausape** differs at once from the preceding in the entire absence of the white apical spot on the forewing (only the fringes are occasionally white), while the red costal band of the hindwing is very broad and covers cellule 7 from the base onwards and often also cellule 6 as far as the often *simple* deep black submarginal spots: no black spot at the base of cellule 7 on the hindwing beneath. — **gausape** *Btlr.* Forewing black above with broad yellow subapical band and broad golden-green hindmarginal spot; hindwing above golden green with broad black marginal band; the under surface yellowish green with black spots in the cells, black discal spots in cellules 2—6, black submarginal spots and black hindmargin on the forewing; hindwing in the middle broadly yellow, only in the cell and at the distal margin green or bluish. Ashanti to Cameroons.

*extensa*. ab. **extensa** *Bartel* only differs in having the yellow subapical band of the forewing even broader and the green parts of the upper surface more suffused with yellow. Cameroons. — **judith** *Weym.* has in the ♂ a triangular green subapical band and a small green hindmarginal spot on the upperside of the forewing and in the ♀ a greenish yellow subapical band and a long yellowish green hindmarginal spot on the forewing. Sierra Leone and Congo.

### Second Subgroup.

In this subgroup also the underside of the hindwing is red at the base of the costal margin, but the red colour does not reach the middle of the margin and is posteriorly bounded by vein 8 or only covers a small part of the base of cellule 7.

**E. cyparissa** is distinguished by the black discal spots and the large black submarginal spots on both wings beneath and by having the submarginal spots on the underside of the forewing placed in an irregularly *curved* line, the spots in cellules 3 and 4 being much nearer to the distal margin; the discal spot in cellule 2 on the forewing beneath is transversely placed and stands before the middle of the cellule. As in the other species the hindwing is green above with broad black marginal band and the forewing at the hindmargin also green at least as far as the cell; the underside of the hindwing is more or less extended gold-yellow or orange-yellow in the middle. — **cyparissa** *Cr.* (44 a). The forewing above with green subapical band, beneath not red at the base. Sierra Leone and Congo. — **aurata** *Carpent.* (44 a). The forewing above with yellow subapical band, beneath not red at the base. Niger and Cameroons. — **sarcoptera** *Btlr.* has like *aurata* a broad yellow subapical band on the upperside of the forewing, but differs from both the other forms in the presence of a bright red spot at the base of the forewing beneath; this spot is placed in the cell and reaches about to its middle. Ashanti and Dahomey.

**E. themis** agrees with the preceding species in the strongly developed black markings on the under surface, but the submarginal spots on the forewing beneath are placed in a quite straight line and the discal spot in cellule 2 is elongate and stands in the middle of the cellule or at least reaches the middle. The wings have a black ground-colour above and are green, blue, orange-yellow or whitish to beyond the middle of the hindwing and at the hindmargin of the forewing. The species embraces a large number of aberrations which intergrade without any sharp demarcation, but can usually be distinguished by the characters cited here. — **themis** *Hbn.* (43 c). Forewing beneath with distinct light subapical band and above with red spot at the base; the subapical band on the upperside of the forewing is in the ♂ gold-yellow, in the ♀ yellow or whitish, moderately large, of uniform breadth or narrower at the costal margin, and consists of 3 or 4 spots in cellules 3—6. Sierra Leone to the Congo. — ab. **permixtum** *Btlr.* only differs in having the subapical band of the forewing composed of only two spots, in cellules 3 and 4. Gaboon. — ab. **justitia** *Stgr.* only differs from the



preceding in having the yellow subapical band of the forewing very broad and rounded. Lagos to Gaboon. — ab. **adonina** Hew. (44 b) has the hindmarginal spot of the forewing and the basal part of the hindwing above orange-yellow and the apex of the forewing more than usually produced, but otherwise agrees with *justitia*. Old Calabar. — ab. **janetta** Btlr. The forewing above without red at the base; its subapical band on both surfaces gold-yellow or yellowish; both wings beneath violet-red at the base. Ashanti to Cameroons. — ab. **reducta** Bartel differs from *janetta* in not having the forewing beneath red at the base. Cameroons. — ab. **aureola** Kirby (43 c, d) is also near to *janetta*, but the red spot at the base of the under surface is not violet-red but brick-red. Cameroons. — ab. **campaspe** Fldr. The subapical band of the forewing beneath distinct and white, above in the ♂ green, in the ♀ white; the discal spots of the under surface black and distinct; on the upper surface the hindmarginal spot of the forewing and the basal part of the hindwing are dark green in the ♂, light green to greenish white in the ♀; the forewing above without red, but beneath red in the basal half of the cell. Gaboon, Congo, Angola. — ab. **niveovittata** Auriv. (44 b) approaches the preceding form, but differs from it and from all the other forms of *themis* in having the black discal spots of the under surface absent or small and indistinct. The subapical band of the forewing is beneath white, but above light green in the ♂ and white in the ♀; the large hindmarginal spot on the upperside of the forewing and the basal part of the hindwing above are golden yellow in the ♂, nearly white in the ♀; on the under surface the black spots in the cells are distinct, but the submarginal spots smaller than usual; the hindwing has the spot at the base of the costal margin brick-red and in cellule 7 a white longitudinal stripe, which is joined posteriorly to a white median transverse band; in the ♀ the basal half of the forewing and the greater part of the hindwing are white or whitish beneath; forewing above without red at the base. Southern Congo. — The last three forms differ from the rest in the forewing having a uniform green ground-colour beneath, without light subapical band; on the upper surface both the subapical band and the hindmarginal spot of the forewing are uniform dark green, as is also the basal part of the hindwing; the forewing above not red at the base; the black discal spots of the under surface are large and sharply marked and the hindwing in the middle broadly golden yellow or yellowish; the base of the costal margin of the hindwing is violet-red. — ab. **normalis** Stgr. (43 d). The discal spots on the underside of the forewing are very large and are placed in a row vertically to the hindmargin, hence nearly parallel with the distal margin; the subapical band on the upper surface is completely separated from the hindmarginal spot. Sierra Leone. — ab. **aberrans** Stgr. only differs from *normalis* in having the subapical band of the forewing joined to the hindmarginal spot by a large green spot in cellule 2. Sierra Leone. — ab. **vetusta** Btlr. (44 a) is distinguished from the two preceding by having the discal spots on the forewing beneath placed in an oblique row running towards the hinder angle. Sierra Leone and Congo.

**E. eberti** Auriv. (44 d) is perhaps only an extreme form of the preceding species, with which it is connected to some extent by *niveovittata*; on the other hand it approximates closely to the forms *sarita* and *inanum* of the following subgroup, scarcely differing from them except in the reddish spot at the base of the costal margin on the underside of the hindwing. Both wings beneath without black discal spots and with indistinct or greenish, small submarginal spots; the subapical band of the forewing is in the ♂ entirely absent on both surfaces or is white, as in the ♀; in the ♂ the forewing above is marked quite as in *sarita* (44 c), with green or blue spots on the forewing which are not sharply defined; the under surface has distinct black spots in the cells and often also at the base of cellule 8 on the hindwing and in the ♂ a brown-yellow ground-colour, which is only in the cell and in cellule 7 of the hindwing more or less tinged with bluish; in the ♀ the under surface is darker, grey-brown, but often broadly suffused with light bluish in the basal part of both wings; the hindwing has usually a broad white median band between vein 3 and the costal margin.

### Third Subgroup.

The species of this subgroup may be at once known by the hindwing not being red at the base of the costal margin beneath. In this subgroup also occur forms with and without black spots on the under surface.

**E. ceres** differs from the other forms of the subgroup in having distinct, though sometimes small, black discal spots on the underside of both wings; also the cells beneath always with 2 or 3 black spots; the hindmarginal spot on the upperside of the forewing is green or bluish, rarely reaches the base, but cellule 2; hindwing blue or green above. The species is very variable and the forms erected intergrade without sharp dividing-lines. — **ceres** F. (43 a). Wings beneath with distinct black submarginal spots, the black discal spots in cellules 3—5 on the underside of the forewing, which basally bound the light subapical band, are usually large and placed close behind the apex of the cell, which is closed by a black transverse spot; hindwing beneath with white or whitish median band and above usually with black discocellular spot; the subapical band of the forewing is light greenish or whitish above, rarely yellow; the under surface at least in the basal part green or bluish, in the marginal part often suffused with brown; the fringes white-spotted. — ab. **nigrocilia** Lathy (44 a) has both wings greenish yellow beneath as far as the submarginal spots, without white median band on the hindwing; the fringes are unicolorous black; the subapical band on the upperside of the forewing is broadly rounded and greenish yellow. Nigeria. — ab. **afzelii** Fldr. (43 b). Hindwing be-



neath without white median band; the subapical band of the forewing in the ♂ above green, beneath light green and indistinct, in the ♀ greenish or white; the under surface with bright green ground-colour, only at the inner margin of the hindwing somewhat yellowish; fringes black. The ♂ fully corresponds to the form *ravola*, *vetusta* of *themis*. Sierra Leone. — ab. **ravola** Hew. (43 b). Hindwing beneath without white median band; the subapical band of the forewing in both sexes broad and orange-yellow; the black spots on the under surface face large and strongly developed. Liberia to Gaboon. — ab. **rezia** Hew. (43 a, b). The subapical band of the forewing is narrow and of uniform breadth and the discal spots on the under surface which bound it proximally small and rather far removed from the apex of the cell (usually much further than in the specimen figured); the apex of the forewing above has often a strong blue or green reflection, especially in the ♂; the ground-colour of the under surface varies from green-yellowish to dark brown, the subapical band of the forewing is usually yellow or yellowish, in the ♀ occasionally almost white. Cameroons to Kuilu. — ab. **cottoni**. *E. Sharpe* apparently only differs from *rezia* in having the yellow subapical band of the forewing broken up into spots. Ituri. — ab. **phaëthusa** Btlr. differs from all the preceding forms in having the submarginal spots on the under surface entirely absent or only indicated; the black discal spots on the contrary are present and the hindwing has a whitish median band; the subapical band of the forewing is light yellow or greenish white (= **adelica** Bartel). — **artaynta** Möschler is so inadequately described that I cannot identify it. The description runs: Most resembles *ceres*; the band of the forewing is, however, not whitish but yellow and its shape is different; it runs from the costal margin obliquely towards the distal margin as far as cellule 4, in the middle of which its outer edge forms an obtuse angle directed towards the distal margin, whilst in *ceres* the band is regular; the colouring of the hindwing is of a duller green than in *ceres*; there is no trace of the whitish band at the costal margin which occurs in *ceres*; the deep black transverse spot on the transverse vein is likewise either entirely absent or only shows through faintly from the under surface; before the distal margin is placed a row of blue-green spots. The ground-colour of the under surface is a more or less dull olive-brown; the first black spot in the median band (at the costal margin) is much shorter and narrower than in *ceres* and projects much less basewards beyond the band; also the other spots of the band are much smaller than in that species; in the cell are placed 1 or 2 round black spots; behind the cell runs as far as cellule 2 a broad, sharply defined, white, bluish-tinged band, which in *ceres* is narrower and not sharply defined; the black spots before the distal margin are smaller than in *ceres* and the black crescentic marginal spots are entirely absent; apex narrowly white; fringes white-spotted. Ashanti.

*wissmanni*. **E. wissmanni** Niep. "Forewing olive-brown above; the apical band, which does not quite reach the distal margin, glossy lilac-blue; costal margin, apex and base with intensive lilac gloss; the black transverse streak in the cell very weakly marked; the dark olive-brown colour at the inner margin notched with light colour. Hindwing lighter above with dark border; the latter basally bounded by the weakly black marked submarginal spots; the black transverse cell-spot showing through faintly; a dull lilac gloss in and at either side of the cell from the base to the dark border; distal margin excised, with black and white fringes. Forewing dirty yellow-brown beneath, in the apex white; apical band whitish, blurred; this as well as the apex with slight lilac gloss; in the cell 3 strong black spots, one placed towards the base, the other two triangularly distad; further forwards a black transverse streak closing the cell; marginal spots very weak, marked with white. Hindwing orange-yellow beneath, the part between cell and costal margin bearing a white band, which, beginning with a broad spot running parallel with the costal margin, becomes gradually narrower to the middle of the cell, is weakly defined basally and fades out towards the distal margin; the cell bears basally 2 vertically placed dots, the lower half as large as the upper; distally to these a thick black streak; submarginal spots faintly white, the first 5 basally bordered with dark; at both sides of the precostal black markings, frosted with lilac; a dull black comma-shaped streak bounds the anterior spot in the band basally; the half of the wing which bears the band, as well as the latter, with slight lilac gloss." Congo: Kassai River.

*viridicaerulea*. **E. viridicaerulea** Bartel (= *rana* Stgr. i. l.) (44 c) differs from *ceres* in having the black discal spots on the under surface very indistinct or absent and from the following species in the distinct, black, bluish-margined submarginal spots on the hindwing beneath. The forewing has the subapical band bluish white and the hindmarginal spot on the upper surface very narrow, scarcely reaching the middle of cellule 1 b; the marginal band on the upperside of the hindwing is without distinct blue spots; the forewing beneath has three black spots in the cell and a black submarginal spot in cellule 1 b; the hindwing beneath is more or less yellowish, especially towards the inner margin, in the cell with 1 or 2 black dots and with a black spot at the base of vein 8; the ♀ with an indistinctly defined whitish median band, which is entirely absent in the ♂. South Cameroons and Gaboon.

*inanum*. **E. inanum** Btlr. (42 d; 44 c). Both wings beneath without black discal and submarginal spots, but with 2 or 3 black dots in the cell of the forewing and 1 or 2 in that of the hindwing; hindwing beneath in both sexes with sharply defined white median band, sometimes broken up into spots, extending from the costal margin to vein 3 or 4; hindwing often with bluish or green submarginal spots on both surfaces; subapical band of the forewing above light yellowish (♂) or nearly white (♀), beneath white; the bluish hindmarginal spot on the upperside of the forewing narrow. Sierra Leone to Angola.



*Suff. inanim. 12*  
**E. sarita** *E. Sharpe* (44 c), like *inanim*, has no black markings on the under surface except 1—3 dots *sarita*. in the cells; the ground-colour of the underside is very variable, light green — yellow-green — yellow-brown, and the hindwing has no white median band but occasionally light green submarginal spots; the subapical band of the forewing is in the ♂ above dark green and triangular, beneath quite obsolete or only indicated, in the ♀ whitish; the blue-green hindmarginal spot on the forewing reaches at least to vein 2. Congo. — ab. **abys-** *abyssinica*. **sinica** *Rothsch.* has on the under surface the base of the costal margin of the hindwing bright ochre-yellow and a black spot on the precostal vein. Abyssinia.

**E. preussi** differs from all the other forms of the subgroup in having a broad white longitudinal band, sometimes tinged with bluish, at the costal margin of the hindwing beneath, covering the base of this margin and then in cellule 7 extending far beyond the middle; the under surface has no black discal spots and the submarginal spots are small or entirely absent; the subapical band of the forewing is always narrow, in the ♂ often very narrow, of uniform breadth, more or less broken up into spots and white, or in the ♂ greenish; the green or bluish hindmarginal spot on the upperside of the forewing is large, reaching at least to vein 2. — **preussi** *Stgr.* (42 d). The forewing above sometimes dark green almost throughout, with two black dots in the *preussi*. cell, sometimes deep black transversely across the middle, as is usual in the species of this group; the ground-colour of the under surface is very inconstant, varying from greenish to yellowish and ochre-brown; the submarginal spots are distinct on the hindwing and in cellule 1 b of the forewing. Cameroons to Angola and the Albert Nyanza. — ab. **njami** *Stgr.* has the forewing blacker above, not greenish in the apical part, and the under *njami*. surface dark rust-brown with distinct submarginal spots. — Njam-Njam-Land. — ab. **njamnjam** *Stgr.* only *njamnjam*. differs from *njami* in the entire absence of the submarginal spots on the under surface. Njam-Njam-Land. — ab. **olivacea** *Grünb.* has the upper surface uniformly dark except for the white subapical band, without a *olivacea*. trace of light or dark submarginal spots on the hindwing and the under surface quite as uniform brownish green with the black cell-spots much reduced. Uganda. — **neumanni** *Rothsch.* is distinguished by having on *neumanni*. the upper surface an ill-defined yellowish nebulous band, running from the apex of the cell of the forewing to the hindmargin and across the middle of the hindwing, thus restricting the greenish colour; the hindwing with distinct submarginal spots above and beneath; the under surface light grey-green. Abyssinia.

**E. francina** *Godt.* (42 d) varies but little and is a very easily recognized species. The wings are black *francina*. above, at the base and hindmargin of the forewing and on the hindwing to beyond the middle a fine (greenish) blue with black spots in the cell (and at the base of cellule 1 b) on the forewing and a very large, rounded black spot at the end of the cell on the hindwing; the broad black marginal band is nearly always ornamented with large, sharply marked, rounded blue submarginal spots; the subapical band of the forewing is narrow, orange-yellow above, indistinct or whitish yellow beneath; the fringes are dotted with white at the ends of the interneural folds. The under surface is uniform greenish, more or less suffused with yellow or brown-yellow, with 2 or 3 black dots in the cells, but without distinct discal and submarginal spots; the hindwing at least in cellule 7 with the beginning of a narrow white median band, which is there bounded proximally by an angled black transverse streak. Sierra Leone.

The two following species, which are unknown to me, apparently belong to this group.

**E. paradoxa** *Neuve.* Forewing above glossy greenish black with narrow dirty white subapical band *paradoxa*. and red-brown hindmarginal spot; hindwing above dull red-brown with narrow black marginal band, with greenish reflection, and light green submarginal spots. Under surface light olive-green; forewing with white subapical band; distal part of the hindwing lighter green with indistinct greenish submarginal spots. Uganda.

**E. cooksoni** *Druce.* Body above with white dots; forewing above black, at the costal margin grey- *cooksoni*. green; subapical band white; the hindmarginal spot broadly brownish chrome-yellow; hindwing above brown-yellow with broad black marginal band and two blue submarginal spots near the hinder angle. Forewing beneath yellow, suffused with blackish green and with three black spots in the cell; hindwing beneath chrome-yellow with a black spot at the base and a black dot in the cell; a broad white submarginal band runs from the base to the apex, where it becomes quite narrow; two indistinct white spots at the apex of the cell and bluish white submarginal spots. Rhodesia.

#### 4. Eleus Group.

Hindwing above and beneath with white or yellowish spots in the marginal band. Thorax and abdomen dorsally with distinct pairs of white spots. Basal part of both wings usually yellow to red-yellow.

**E. edwardsi** *Hoeven* (42 c, ♀, not ♂). Hindwing on both surfaces with a black discocellular spot. The *edwardsi*. cells above and beneath with three large black spots. Forewing in the ♂ usually uniform greenish grey-brown above, with black veins, in the ♀ red-yellow in the basal part; hindwing yellow-brown above with blackish marginal band and light yellow submarginal spots. The under surface lighter, with or without whitish submarginal spots. Ashanti to Dahomey. — In ab. **viridis** *Suff.* the basal part of the hindwing is dusky green *viridis*. above instead of red-brownish and the cell-spots are indistinct. Togo. — ab. **clarus** *Auriv.* is on an average *clarus*. lighter and occurs in the Congo region.



*zampa.* **E. eleus** is very variable and is distinguished at once from the other two species by the underside of the hindwing having at the costal margin a broad white longitudinal stripe, just as in *E. preussi*, beginning at the base and almost entirely filling up cellule 7 as far as the submarginal spot. The submarginal spots of the hindwing are pure white and the cell entirely without a spot at the end; the subapical band of the forewing is narrow, above white or yellow, beneath always white. — **zampa** Westw. (42 c). Forewing above unicolorous light bluish grey-green, with very narrow, sometimes interrupted, white subapical band and white apical spot; hindwing above similarly coloured, only occasionally tinged with red-yellow in the cell, and with very broad, white-spotted marginal band. Beneath both wings are red-yellow, at the distal margin more or less greenish grey; cell of the forewing with 3, of the hindwing with one black dot. Sierra Leone. — ab. **ferruginea** Stgr. only differs in having the hindwing above brown-red to beyond the middle and only close to the marginal band narrowly greenish. Old Calabar, Cameroons. — ab. **ratrayi** E. Sharpe is another near ally of *eleus*. *zampa*, apparently only differing in having the forewing above brown-red near the base. Uganda. — **eleus** Drury (42 b; erroneously called *ruspina*). Both wings above in the basal half red-brown to yellow-brown; the apex of the forewing without white spot, only the fringes white. The apical part of the forewing and the marginal band of the hindwing above black or black-blue; the cell of the forewing above without black dots; the black colour of the forewing does not reach the base of vein 3. Sierra Leone to Angola and Uganda. — ab. **hybrida** Auriv. The apical part of the forewing and the marginal band of the hindwing are tinged with greenish; the apical part of the forewing is narrower and does not cover the base of cellules 4 and 5, which is orange-yellow for a breadth of about 5 mm., the subapical band of the forewing above is light yellow and irregular, the spot in cellule 3 being punctiform and that in 4 much larger than the others; otherwise agrees with *eleus*. *coprates*. Congo. — ab. **coprates** Druce (42 a, as *hybridus*; 42 b). The cell of the forewing above with 2 black dots; the marginal band of the hindwing and the apical part of the forewing above more or less tinged with greenish; otherwise similar to *E. eleus*. Congo and Angola. — ab. **orientalis** Rothsch. only differs from *eleus* in having the white subapical band of the forewing broader, the black apical part of the upperside of the forewing extending to the base of vein 3 and in the presence of two black spots in the cell of the forewing above, as in *coprates*. Congo and German East Africa.

*ruspina.* **E. ruspina** Hew. (42 b, as *eleus*) has almost the colour and markings of *eleus*, but the shape of the wings is different, the forewing being shorter and more obtuse, with the distal margin weakly excised, and the hindwing distinctly but shortly produced at the anal angle. On the underside of the hindwing the white costal stripe is entirely absent. The red-yellow ground-colour is alike on both surfaces; the black apical part of the forewing and the marginal band of the hindwing are as sharply defined beneath as above; the marginal band of the forewing is much narrower between the hinder angle and vein 3 than in *eleus*; the subapical band of the forewing is white, sometimes narrow, sometimes broad and rounded; the breast with 2 very large white lateral spots at each side. The species bears a great external (mimetic?) resemblance to some Geometrids, such as *Aletis helcita* L., and some Agaristids, as *Weymeria athene* Weym. and *Tuerta ruspina* Auriv.

### 5. Perseis Group.

The species of this group are easily distinguished from all others by the light median transverse band, sometimes broken up into spots, on the black forewing. This band consists of a transverse spot in the cell, an elongate spot in cellule 2 and often also a narrow spot in 1 b along the posterior side of vein 2. In addition to the median transverse band the forewing has, as in nearly all the species of the genus, a subapical band, which is white or yellowish. The hindwing is red or red-yellow on both surfaces, with black marginal band.

*perseis.* **E. perseis** Drury (42 a). Forewing with a red-yellow hindmarginal spot, covering the base of cellules 1 a and 1 b and reaching the median transverse band; this consists of 3 yellow spots, the one in cellule 1 b small and narrow and the one in the cell rounded and separate; the marginal band of the hindwing on both surfaces with white submarginal spots and beneath continued along the costal margin to vein 8, filling up cellule 7 except at the base and broadly edged with light yellow proximally. Hindwing produced at the anal angle as in *ruspina*. Sierra Leone and Liberia.

*eusemoides.* **E. eusemoides** Sm. & Kirby (42 a). Forewing above without hindmarginal spot, the median band consisting of only two separated spots (in the cell and in cellule 2); the marginal band of the hindwing on both surfaces unspotted; the cell of the forewing beneath red at the base, both with 3 black dots; hindwing beneath spotted with light yellow in the middle (in cellules 4 and 5). Congo.

*imitans.* **E. imitans** Holl. is similar to the preceding species, but the median band of the forewing is less interrupted, the forewing has several small blue spots at the base and a long yellow stripe at the hindmargin and the hindwing has above 3 black dots in the cell and two blue submarginal dots in each cellule. Ogowe Valley; rare and little known; much resembles *Xanthospilopteryx longipennis* Wkr.

*zaddachi.* **E. zaddachi** Dew. (44 c). Forewing black above, with slight greenish reflection and with no other markings but the two yellow, continuous transverse bands; marginal band of the hindwing above unspotted,



beneath with 2 black submarginal spots in each cellule; cell of the forewing beneath greenish yellow with 3 black dots, that of the hindwing beneath with two dots, above unspotted; hindwing beneath more or less suffused with light yellow in the middle. Cameroons to Angola and German East Africa. — ab. *christyi* E. Sharpe *christyi*. only differs in having both surfaces of the hindwing ochre-yellow instead of red, only the underside red at the costal margin. Toro.

### 11. Genus: **Hamanumida** Hbn.

The distinctive characters of this genus have been given above, in the synopsis of the genera. The forewing is triangular with the distal margin nearly straight and the hindwing has the distal margin uniformly rounded.

The larva was recently discovered in Natal and agrees almost entirely with the known larvae of *Euphaedra*, having like these at each side of the body a row of long feathery spines spreading out horizontally; it is greenish in colour and has a habit of sitting on the upperside of leaves on the midrib; in this position the spines are said to resemble the lateral veins of the leaf and the larva is difficult to detect. The pupa is more slender than that of *Euphaedra* and has neither the lateral nor the dorsal elevations of the latter.

The only species is widely distributed and differs in its habits from the rest of the Nymphalids in that it occurs also in open districts, which are not at all or scarcely wooded.

**H. daedalus** F. (46 f). Both wings unicolorous slate-grey above with some black and white streaks *daedalus*. in the cells and three transverse rows of white, black-ringed dots in the distal half; the apex of the forewing occasionally whitish; the under surface is grey to brown or yellowish with the black markings of the upper surface, but without, or almost without, the white dots. f. *meleagris* Cr. (46 f) is quite similar above, but beneath lighter, yellow-brown to yellow, with distinct white spots and dots. The species occurs everywhere in continental Africa to the south of the Sahara with the exception of Cape Colony, and is even found in South Arabia, where it is the only representative of the Nymphalids. *meleagris*.

### 12. Genus: **Aterica** Bdv.

The wings are short and broad, particularly in the ♂; the forewing has the distal margin nearly straight and has two light transverse bands, often broken up into spots, one in the middle, composed of four larger spots in the cell and cellules 2—4, and one before the apex consisting of three or four small spots in cellules 4—6 (the spot in cellule 5 bipartite). The peculiarities of the neuration have already been noted on p. 143 in the generic synopsis.

The early stages are unknown.

**A. rabena** Bdv. (48 b). Forewing black above, the base and the hindmargin at least to vein 2 rust-brown with yellow transverse bands and yellow submarginal spots. Hindwing yellow-brown above, darker at the base; at the costal margin and the apex black-brown and with a fine black submarginal line, which disappears posteriorly. The under surface almost exactly as in the following species. Madagascar. *rabena*.

**A. galene** Brown (= *cupavia* Cr.) (48 a, b). In the ♂ both wings are deep black above; the forewing has eight light yellow spots, of which three small ones belong to the subapical band, four somewhat larger to the median band and the eighth is punctiform and placed at the anterior margin of the cell; in addition whitish submarginal streaks are sometimes present in cellules 1 b and 2. The hindwing in the middle with a light yellow transverse band covering the apex of the cell and the base of cellules 2—6 and also forming a spot in 1 e. The forewing black-brown beneath, at the apex broadly grey, with the same light yellow spots as above; the hindwing beneath cloudy whitish grey with 2 black dots in the cell and the light transverse band as above, but much duller. The ♀ is larger, has white spots on the forewing and white, occasionally brown-yellow (= ♀-ab. *dimorpha* Bartel), broader and more rounded median area on the hindwing; the hindwing is often more or less suffused with red-brown before the distal margin in the broad black marginal band. Throughout West Africa from Sierra Leone to Angola and the Albert Nyanza. — ab. *extensa* Heron has larger spots on the upper-side of the forewing and broader median area on the hindwing. Ruwenzori. — *incisa* Rothsch. has smaller spots on the forewing and the median area of the hindwing more rounded, cut into by a black streak at the end of the cell. Abyssinia. — *theophrane* Hpffr. (48 a, b) has the median area of the hindwing in the ♂ darker yellow, distally margined with brown-red, and in the ♀ saffron-yellow or red-yellow and very large. Portuguese and German East Africa. ♀-ab. *dechroma* Strand only differs from *theophrane* ♀ in having the median area of the hindwing white, margined with yellowish. German East Africa. *galene*. *dimorpha*. *extensa*. *incisa*. *theophrane*. *dechroma*.

### 13. Genus: **Cynandra** Schatz & Röber.

Both sexes recall species of *Diestogyna* and like these are entirely dissimilar. The distal margin of the hindwing projects distinctly but obtusely at vein 3, in which this genus differs from all other Nymphalids. The forewing has a white submarginal dot in each cellule from 2 to 6 and in 8; the dots stand in a double transverse line, curved in shape.



*opis.* **C. opis** Dr. (46 e, f). In the ♂ the wings are black above, with blue reflection and bright blue transverse lines, 3 or 4 in the cell of the forewing and 3 distally to it, the third shortly before the distal margin, and 5 on the hindwing; the under surface is chequered with violet-grey and dark brown. The ♀ is black-brown above with grey-yellow instead of blue transverse lines and with a common broad yellow median band running from vein 3 on the forewing to the middle of the inner margin of the hindwing; on the under surface not only the median band but also almost the whole distal part of the hindwing (except the apex) and a marginal band on the forewing are light yellow with lunulate brown submarginal line; the basal part of both wings is dark grey with brown spots. Sierra Leone to Angola and Uganda.

#### 14. Genus: **Pseudargynnis** Karsch.

As the name indicates, the single species belonging here strongly recalls in colour and markings the middle-sized Palearctic *Argynnis* species, but it still more resembles *Atella phalantha* Drury. In the neurulation, however, as indicated in the generic synopsis, it agrees quite closely with the following genus *Catuna*. Concerning the early stages nothing is known.

*hegemone.* **Ps. hegemone** Godt. (= duodecimpunctata Snell.) (46 f). Both wings orange-yellow above with black transverse lines and spots in and at the cell, and behind the cell on the forewing with three and on the hindwing with two transverse rows of free or almost free black spots and a more or less thick black marginal line; the under surface is lighter but with the same dark markings and further with a common rust-brown median line, which runs from the apex of the forewing to the inner margin of the hindwing and in the ♀ is much broader, almost forming a band; before the apex of the forewing are placed on both surfaces 3 or 4 white submarginal dots. Cameroons to Angola and Uganda. — *obscurata* Grünb. is distinguished by having all the black markings more strongly developed and occurs in the Cameroons. — *nyassae* Bartel (46 f) on the other hand is more weakly marked than the type-form, has the black markings smaller and entirely lacks the dark marginal line on the upperside of both wings. Nyassaland and Rhodesia.

#### 15. Genus: **Catuna** Kirby.

All the species have a similar, very characteristic pattern, the blackish or dark grey ground-colour of the upper surface being divided into angled or rounded spots by fine yellow or grey-yellow lines: these lines are very irregularly arranged on the forewing, being in particular very distinct in the cell and at the hindmargin in cellules 1 a and 2, while occasionally they form light rings to the rounded spots of the ground-colour; on the hindwing on the contrary they occur in the distal part as three continuous transverse lines. The hindwing is further characterized by a light median transverse band; this is narrow at its commencement at vein 1 b near the base, runs towards the apex and anteriorly becomes gradually broader, so that it almost entirely covers cellules 5 and 6 and in 6 nearly reaches the distal margin. The under surface is light yellow with more or less developed dark markings.

The larva, like that of *Euphaedra*, has on either side of the dorsum a row of long, strongly branched spines, spread out laterally; they are, however, somewhat shorter than in *Euphaedra* and without such dense feather-like branches.

The pupa has the ventral surface strongly and uniformly curved, but bears no dorsal spine; the head has two short, obtuse points and the cremaster is straight.

*sikorana.* **C. sikorana** Rogenh. (46 d) differs from the other species in having the median band of the hindwing yellow-red and on the forewing a sharply defined white subapical band composed of 3 spots in cellules 4—6. At the posterior side of the cell of the forewing there are three dark, light-margined spots in a straight line one after another, close at the base of cellules 1 b—3. German East Africa.

*crithea.* **C. crithea** Drury was the first species of the genus described, as long ago as 1773. The median band of the hindwing is light yellow and the white subapical band of the forewing is absent, but otherwise the markings agree very nearly with those of *sikorana* (46 d) and the three dark, light-ringed, round spots at the base of cellules 1 b—3 stand out very sharply. Sierra Leone to the Congo and Uganda. — Larva green with glossy black head and black spines. Pupa light green with small dots and streaks of black-green or blue colour.

*oberthueri.* **C. oberthueri** Karsch (46 d, e) differs from *crithea* in the entire absence of the dark spot at the base of cellule 3 on the forewing, while the black basal area of cellules 1 a and 1 b is distally bounded by an irregularly curved yellowish line and encloses in 1 b two elongate grey-yellow spots; thus there is only at the base of cellule 2 a rounded free spot. The under surface in the ♂ is almost unicolorous white-yellow, but that of the ♀ is rather well marked. Cameroons to the Congo.

*angustata.* **C. angustata** Fldr. is very similar to the preceding species, only differing in having the black spot which covers the base of cellules 1 a and 1 b on the upperside of the forewing unicolorous and of uniform breadth and distally bounded by an almost straight yellowish line parallel with the cell.

### 16. Genus: **Pseudoneptis** Snell.

The only species of this genus is a delicately built butterfly, somewhat recalling the *Neptis* species in the markings. The forewing has the apex obtuse and the distal margin weakly curved; margin of the hindwing undulate. — Larva with a pair of rather widely separated dorsal spines on each segment from 2—11 and on either side below the spiracles with a small tubercle bearing stiff bristles; the spines are strongly built but rather short and somewhat thickened at the tip, the first 4 distinctly longer than the rest. — The pupa has a very characteristic shape, the abdomen being curved backwards and the middle of the anterior side strongly ventricose; the mesothorax has a sharp longitudinal ridge and a weak spine on the shoulder; segments 4—7 of the abdomen are sharply keeled mediodorsally.

**Ps. coenobita** F. (46 d). Both wings black, with light greenish above, white and much broader *coenobita*. beneath, straight transverse bands and small spots, the arrangement of which can be best seen from the figure. Larva dark green with the spines blackish, at the base blue, and with red-brown head. Pupa green, with the wing-cases tinged with milk-whitish. Sierra Leone to Angola and Uganda.

### 17. Genus: **Pseudacraea** Westw.

The species of this genus are rare and almost all mimic to a marked degree the Danaids and Acraeids, especially *Planema*. As in all mimetic genera the species differ very greatly in colour, pattern and shape and can only be recognized as really congeneric by a study of the neurulation. The most important neurulation characters have been given above in the generic synopsis (p. 143).

The earlier stages were unknown up to a short time ago, but have been recently discovered by Mr. G. F. LEIGH of Durban, Natal. The three species bred by him have larvae and pupae of such different forms that it would perhaps be justifiable to divide the genus into subgenera. The descriptions and figures thus far furnished by other authors from LEIGH's material are unfortunately rather superficial and give no clue as to several important details; the descriptions and the figures, moreover, do not agree in all points.

As common to all the species yet known may, however, be cited: Egg spherical, above somewhat flattened, with regularly arranged small protuberances, so that it is similar to a sea-urchin divested of its spines. — Larva with a finely branched spine at either side of the dorsum on each segment from 2—11; those on the 2nd and 11th segments are usually much longer than the rest, which are short and erect; head sometimes with short thorns on the upper surface. — Pupa with very elongated and pointed head-part; this and the thorax form with the abdomen a more or less distinct angle, so that the middle of the dorsum projects ventricosely and the ventral side becomes somewhat concave.

The genus occurs both on the continent and on Madagascar and the Comoros and is apparently only entirely absent in Arabia.

According to the markings the species may be divided into the following groups.

#### Synopsis of the Groups.

- I. Hindwing at least beneath with sharply marked black dots or streaks at the base.
  - A. Forewing on both surfaces with black basal dots. Palpus beneath (except at the tip) unicolorous yellow or whitish.
    - a) Cell of the hindwing very short. Veins 3 and 4 of the hindwing long-stalked. Wings with green spots. Body without light spots (subgen. *Chloropoea* Auriv.). 1. *Semire* Group.
    - b) Cell of the hindwing moderately long; veins 3 and 4 from the same point. Wings never spotted with green; body with light dorsal spots.
      - \*. Hindwing with narrow, sharply defined, light-spotted marginal band, but without black streaks on the interneural folds. (*Acraea*-like forms.) 2. *Hostilia* Group.
      - \*\*. Hindwing without light marginal spots, but with black streaks on the interneural folds. (*Planema*-like forms.) 3. *Eurytus* Group.
  - B. Forewing on both surfaces without black basal dots. Palpus beneath black with white longitudinal stripes. 4. *Lucretia* Group.
- II. Hindwing on both surfaces without black basal dots, above almost unicolorous black. Forewing with several small and three large green spots, one each in the cell and in cellules 1 b and 2. 5. *Glaucina* Group.

#### 1. *Semire* Group.

Only a single species, which differs from all others in the very small cell of the hindwing.



*semire.*

**Ps. semire** Cr. (46 a). Both wings black-brown above, in the basal part with large black dots and in the middle with green spots, which on the hindwing form a continuous median band, but on the forewing are smaller and widely separated, in the cell of the forewing also two small green spots; the interneural folds before the distal margin with broad, black, light-bordered streaks and on the hindwing between these and the green median band with a row of brown-red spots. The under surface is lighter than the upper, especially at the base, and the green spots whitish. Sierra Leone to Angola.

## 2. Hostilia Group.

Basal part of both wings with black, usually rounded spots and the hindwing on both surfaces with sharply defined black marginal band, spotted with red-yellow, and entirely without black streaks on the interneural folds. Hindwing above for the most part and forewing at least at the hindmargin with red-yellow or red ground-colour.

*hostilia.*

**Ps. hostilia** Drury is a rare *Acraea*-like species, differing quite considerably from all the others in the markings of the wings. The hindwing and the basal half of the forewing are red-yellow above with black spots, rounded on the forewing, but on the hindwing united into three transverse streaks; the apical half of the forewing is black with whitish or light yellow spots; the yellow marginal spots of the hindwing are large and proximally only bounded by narrow black lunules. The under surface is lighter and particularly at the base whitish. Sierra Leone to Ashanti. — **warburgi** Auriv. (46 c) is the more southern race and differs in having the yellow marginal spots on the upperside of the hindwing very small and proximally bounded by thick lunules united into a band. Cameroons and Congo.

**Ps. boisduvali** is one of the largest and most beautiful species. As in *hostilia*, the hindwing is yellow-red to red-yellow with black, red-spotted marginal band, but that of *boisduvali* has in the basal part large rounded black spots. Forewing in the distal part more or less semitransparent with thick black longitudinal streaks between the veins, at least in cellules 2 and 3; the black spots in the basal half are large and rounded and are present both in the cell and in cellules 1a—2; it should be specially noted that one of these spots is placed on vein 2. The species is considerably larger than *Acraea egina* (54 d), but mimics it almost exactly and has also local races corresponding to those of *egina*. — **boisduvali** Dbl. The forewing in the ♂ is smoke-brown, only red-yellow in the distal half of cellules 1a—2, in the ♀ the upper surface is smoke-brown throughout, entirely without red-yellow. Sierra-Leone to the Congo. Corresponds to the type-form of *Acraea egina*, which occurs in the same localities. — ab. **colvillei** Btlr. The basal part of the forewing as far as vein 3 red-yellow; the apical part smoke-brown without yellow markings. Natal to German East Africa. — **trimeni** Btlr. (46 b) only differs from *colvillei* in having on the forewing a broad ochre-yellow or orange subapical band, which at vein 3 is more or less joined to the hindmarginal spot. Natal to German East Africa. Corresponds to the form *areca* (54 e) of *Acraea egina*, found in the same localities; also occasionally occurs in West Africa as an aberration. The larva is black-brown with the spines branched like moss, and lives on *Chrysophyllum natalense*, a tree of the family Sapotaceae. The pupa is green with the point of the head brown and somewhat upcurved and the dorsal side strongly curved. — ab. **deficiens** Karsch was described from a specimen of *colvillei* in which on the forewing the black spots in cellule 1 b and on vein 2 are absent. German East Africa.

## 3. Eurytus Group.

The numerous forms of this group may be known at once by the long, distinct black streaks on the interneural folds of the hindwing; forewing always with 5 rounded black spots in the cell and 1 or 2 at the base of cellule 1 b. The butterflies stand in interesting but very complicated mimetic relations with the *Planema* species which fly together with them. In the ♂♂ the forewing is more pointed with the distal margin straight or slightly emarginate, in the ♀♀ the forewing very obtusely rounded with the distal margin curved.

**Ps. dolomena** is distinguished from all the others by the large basal dots of the forewing, which are surrounded by white or whitish rings. — **dolomena** Hew. (46 c). Forewing in the ♂ above with very large red hindmarginal spot, covering cellules 1a—2 and the posterior longitudinal half of the cell, and with a yellow subapical band, which at least in cellule 3 forms a large spot and usually has also a streak in cellule 2, nearly joined to the hindmarginal spot; in the apical part the black interneural folds are only indistinctly edged with grey; the hindwing is yellow-red above with black costal margin and broad black marginal band. In the ♀ the forewing is black-brown at the base as far as the hindmargin and has in the middle of the hindmargin a light yellow spot, which is only about 7 mm. in breadth but reaches at least to the middle of cellule 2; the subapical band is light yellow; the hindwing is light yellow as far as the middle and then very broadly blackish. Sierra Leone to Angola. — **albostrigata** Lathy has the hindwing marked as in the type-form, but the forewing differs in the absence of the subapical band, while its apical part bears long white stripes. Uganda. — **rubrobasalis** Auriv. agrees with *albostrigata* as regards the forewing, but has in the ♀ a sharply defined black marginal band, only 4 mm. in breadth, on the hindwing. Southern Congo: Katanga. — **pharsa** Fruhst. was described from a ♂ in which the subapical band of the forewing is white and the hindwing has a sharply defined marginal band only 1—2 mm. in breadth. Possibly the ♂ of *rubrobasalis*. German East Africa. — **usagarae** Stgr.



Both wings in the ♀ red-brown above at the base; the red-brown colour on the forewing covers almost the whole of the cell and the base of cellules 1a—2; somewhat behind the middle of the hindmargin is placed a narrow light yellow band, which, however, extends scarcely or not at all beyond vein 2; the subapical band of the forewing and the broad median band of the hindwing are also light yellow; the marginal band of the hindwing is 6—8 mm. in breadth and not sharply defined proximally. The ♂ is not known to me with certainty. German East Africa.

In the following species the round black spots in the cell of the forewing are not light-ringed. They may be divided into two sections.

a. The forms of the first section may be known by the forewing having a light hindmarginal spot and a light subapical band completely separated from it and directed towards the distal margin, at most reaching vein 3 and placed far behind the apex of the cell; occasionally the subapical band is entirely absent. The forms of this division possibly belong to only one species. Dr. JORDAN even thinks that the first forms of the second division also belong to this species.

**Ps. eurytus** L. (46 c). The hindmarginal spot of the forewing is large, reaches vein 3 and has its *eurytus*. proximal edge sharp and straight, but does not cover the base of cellules 1b and 2; hindwing beneath at the base reddish, in the ♂ above red-yellow, towards the distal margin gradually becoming broadly darkened, in the ♀ white with very broad black marginal band, rather sharply defined proximally; the hindmarginal spot and the subapical band of the forewing yellow in the ♂, white in the ♀. Sierra Leone to the Cameroons. ♀-ab. **epigea** Btlr. The subapical band and the broad hindmarginal spot of the forewing are light orange-yellow *epigea*. as in the ♂, hindwing the same, the upperside only with a dark marginal band 3—4 mm. in breadth. Among the type-form. — ab. **bicolor** Auriv. is distinguished by having the subapical band of the forewing white, *bicolor*. but the hindwing and the hindmarginal spot on the forewing red-yellow. Congo. — **terra** Neave differs in *terra*. having the hindmarginal spot of the forewing very broad, almost entirely filling up the base of cellules 1a—2, whilst the ochre-yellow ground-colour of the hindwing reaches the distal margin in cellules 1a—4 and only in cellules 5—7 is separated from it by a narrow black band; the hindmarginal spot and the subapical band of the forewing are lighter yellow. Uganda. — **imitator** Trim. is the south-eastern race and is distinguished *imitator*. by having the hindmarginal spot of the forewing absent or very small and placed behind the middle of the hindmargin and the hindwing black-brown at the base, so that the white colour forms a median band. The markings are white in the ♀, light ochre-yellow or whitish in the ♂. Natal.

**Ps. theorini** nearly approaches the preceding species and is probably only a form of it; it only differs in the narrower subapical band and the absent or indistinctly defined hindmarginal spot on the forewing; the subapical band in the ♂ is only about 3 mm. in breadth and in cellules 5 and 6 often indistinct or absent; in the ♀ it has an almost uniform breadth of 3—5 mm. — **obscura** Neave. The hindmarginal spot on the *obscura*. upperside of the forewing is indicated by an indistinctly defined area irrorated with red-yellow scales; the hindwing is dark red-brown above with thick black streaks on the interneural folds. Uganda. — **theorini** *theorini*. Auriv. Forewing above with black-grey ground-colour reaching the base and entirely without hindmarginal spot; hindwing above red-brown with black streaks between the veins and blackish marginal band about 4 mm. in breadth and indistinctly defined proximally. Cameroons. — **consanguinea** Auriv. only differs from *consanguinea*. *theorini* in having the entire basal half of the forewing to the apex of the cell and the middle of vein 3 yellow-brown; there is no distinct hindmarginal spot; corresponds exactly to *Planema consanguinea* Auriv. (58 b). Cameroons.

**Ps. striata** Btlr. (46 d) is rather variable, but may be at once known by the entire absence of the *striata*. subapical band of the forewing. Forewing above sometimes almost entirely black-grey, only before the distal margin somewhat relieved with yellowish between the black streaks, sometimes more or less red-brown in the basal part; hindwing above with a narrow (♂) or broad (♀) dark marginal band, the ground-colour red-brown or yellowish, often lighter in the middle (especially in the ♀); mimics *Planema vestalis* (58 c). Sierra Leone to Angola.

b. The following species have instead of the subapical band of the preceding a median band, which usually touches the apex of the cell, posteriorly extends beyond vein 3 and is often joined to the hindmarginal spot and reaches the hindmargin; when the band does not touch the cell it is directed towards the hindmargin and reaches at least vein 2.

**Ps. conradti** Oberth. is only known to me in the male and strongly recalls the ♂ of *Ps. eurytus* (46 c). *conradti*. The subapical band of the forewing touches the apex of the cell and has also a spot in cellule 2, but is well separated from the small hindmarginal spot, the latter being anteriorly bounded by vein 2; the upperside of the hindwing is blackish at the base and has a red-yellow median band about 10 mm. in breadth, slightly narrowed anteriorly and distally sharply bounded by the black marginal band, which is somewhat widened at the anal angle; the underside of the hindwing is broadly reddish at the base. German East Africa: Usambara.

**Ps. rogersi** Trim. is perhaps only an aberration of the preceding species. In the ♂ the subapical band of *rogersi*. the forewing is joined to the hindmarginal spot and the latter is larger, almost reaching the base of cellules 1a and 1b; the upperside of the hindwing is scarcely darkened at the base and its black marginal band has a uniform breadth of about 5 mm. The ♀ is very similar to that of *imitator*, but the subapical band of the forewing touches the cell and has also a spot in cellule 2 and the white median area of the hindwing is distally more strongly and more uniformly rounded. British East Africa and German East Africa: Usambara. (Formerly cited by me as „*imitator*“.)

**Ps. ruhamia** Hew. (46 c) is distinguished from the following species by having the median band placed *ruhamia*. behind the apex of the cell, narrow and of almost uniform breadth, reaching vein 2 or even the hindmargin;



the upperside of the forewing is black-brown to the base or more or less suffused with red-brown in the basal half; in the latter case the median band is less sharply defined basally in cellules 1a—2; hindwing above yellow-red with black rays and sharply defined, but narrow, black marginal band. Ashanti to Angola.

*simulator.* **Ps. simulator** *Btlr.* (46 d). In the ♂ the forewing is blackish above with an orange-yellow median band, which is anteriorly about 4 mm. in breadth, covers the base of cellules 3—5 and forms a spot in the apex of the cell, but is posteriorly much widened in cellules 1a—2, about 11—12 mm. broad; sometimes the base is red-brown, in which case the median band is indistinctly defined basally; hindwing above reddish at the base, in the middle lighter, yellowish or at the inner margin whitish, and at the distal margin darkened without sharp demarcation. In the ♀ the median band of the forewing is white, of almost uniform breadth and terminating posteriorly in the middle of cellule 2, the hindwing reddish at the base and with a broad white median band, which is almost twice as broad at the inner as at the costal margin. Sierra Leone to Ashanti.

*fulvaria.* **Ps. fulvaria** *Btlr.* "Male above smoky-brown; the nervures and folds black; primaries with a broad strongly angulated tawny band, widening from subcostal nervure to inner margin. Secondaries with central area, from subcostal nervure to inner margin, tawny-ochreous, deeper coloured at base. Female: primaries with an oblique broad creamy band from costal nervure to just below second median branch, where it becomes obsolete, but is represented by a greyish nebula on centre of first median branch and reappears as a creamy ochraceous patch on inner margin; secondaries with the base greyish ochraceous, black-spotted; a central diffused creamy band from costa to inner margin, which is ochreous." Angola.

*impletea.* **Ps. impletea** *Grünb.* approaches the preceding species, but differs from it and from all others in the very broad transverse band of the forewing, which entirely covers the base of cellule 2 and also nearly reaches the base of cellules 1a and 1b, and in the uniform yellow-brown ground-colour of the hindwing. In the ♂ the bright yellow-brown median band of the forewing has a breadth of 7 mm. at the costal margin, 12.5 mm. at vein 3 and 18 mm. at the inner margin and also covers the anterior angle of the cell; its distal edge is straight from the costal margin to vein 3; the hindwing is only somewhat darkened close to the base, has a narrow blackish marginal band (anteriorly about 3 mm., posteriorly only 1 mm. in breadth) and is weakly angulated at the anal angle. In the ♀ the transverse band is even broader than in the ♂ and its distal boundary is curved; it reaches the hindmargin as in the ♂ and is yellow-brown; the hindwing is rounded at the anal angle and has a somewhat broader marginal band, but is otherwise coloured as in the ♂. Sesse Islands.

*fickei.* **Ps. fickei** *Weym.* ♂. Forewing black-brown with a broad orange median band, which is about 7 mm. in breadth at the costal margin, 12 mm. at vein 3, is not widened at the hindmargin and hence does not entirely cover the base of cellules 1a—2; the hindwing is distinguished by having on the upperside a black costal band extending [to vein 7 or] 6 and a black marginal band 10 mm. in breadth, sharply defined basally; the ground-colour is consequently only present as a triangularly rounded-off, sharply defined, whitish median band; hindwing beneath reddish brown at the base nearly to veins 2 and 5, then with a sharply defined white median band of a uniform breadth of 7 mm., which reaches the costal margin. ♀ unknown.

*occidentalis.* German East Africa: Mhonda. — **occidentalis** *form. nov.* only differs in having the median band of the hindwing above light orange, beneath light yellow and not sharply defined and not reaching the costal margin. Gold Coast: Accra. — In both forms the stripes on the interneural folds are fine and stand out but little.

*hobleyi.* **Ps. hobleyi** *Neave* (= *togoensis* *Bartel*; ♀ = *tirikensis* *Neave*). As in the preceding species the ♂ has on the forewing a broad orange transverse band, which covers the apex of the cell and the base of cellules 4—6, is angled at vein 3 and then continued in a uniform breadth to the hindmargin, without completely covering the base of cellules 1—2; the hindwing is reddish brown at the base and has then a broader or narrower white median band, which is very sharply defined and becomes wider towards the inner margin. The ♀ only differs in having the transverse band of the forewing white, 8—9 mm. in breadth at the costal margin and often only continued to the middle of cellule 2, occasionally reaching the hindmargin, but in cellules 1a—2 narrower and less sharply defined; the dark marginal band of the hindwing is often broader than in the ♂. Uganda and Togoland.

*karschi.* I subjoin **P. karschi** *Fruhst.*, which is unknown to me and is insufficiently described. "Forewing grey-brown, below the cell basally tinged with red-brown; beyond the cell a narrow dark yellowish band, which reaches median vein 3 and costally becomes obsolete; black dots in the cell as in *ruhama* *Hew.*, base of the hindwing dark red-brown, the submarginal area whitish; distal border dark black-grey; interneural stripes thinner, somewhat thinner than in *ruhama* and dark brown instead of black. Under surface: forewing lighter than above, the distal half grey, the basal half black-brown; anally at the submedian a whitish area; hindwing as above, except that the marginal border is narrower and the submarginal area purer white." Togoland: Bismarckburg.

#### 4. Lucretia Group.

The species of this group are easy to separate from those of the preceding groups by the black, white-striped palpus and by the absence of the black spots at the base of the forewing. Beneath, however, they are very different. The sexes are coloured and marked almost alike.



**Ps. kuenowi** strongly recalls *Ps. hobleiyi* in the orange transverse band of the forewing and the white median band of the hindwing, but has in the basal part of the forewing instead of the black dots a thick black longitudinal streak in the cell and in 1 b. — **kuenowi** Dew. (46 b). The orange transverse band of the forewing *kuenowi*, of almost uniform breadth between the costal margin and vein 3, its spot in cellule 1 b much shorter than that in cellule 2; the white median band of the hindwing is narrow, with an almost uniform breadth of 5—6 mm., and only reaches vein 1 b, cellules 1 a and 1 b being light yellowish nearly to the base. Congo, rare; mimics *Planema poggei* (58 d). — **neumanni** Thurau (= hypoxantha Jord.) only differs in having the orange median *neumanni*, band of the forewing somewhat broader, distinctly wider at the costal margin than at vein 4, the spot in cellule 1 b as long as that in 2, while the white median band of the hindwing reaches the inner margin, towards which it is distinctly widened; the inner margin is only yellowish between the white band and the anal angle. Uganda.

**Ps. gottbergi** Dew. (46 b) has on the forewing a narrow, somewhat curved transverse band of almost *gottbergi*, uniform breadth, which reaches the hindmargin near the hinder angle, is composed of nearly quadrate spots and has a spot also in the apex of the cell. The hindwing is dark red-brown with black streaks and narrow black marginal band. The forewing on both surfaces with a thick black longitudinal streak in the cell and in cellules 1 b and 2. This rare species is coloured and marked almost exactly like *Ps. ruhamia* (46 c) and *Planema elongata* (58 b, c). Cameroons to the southern Congo region.

**Ps. clarki** Btlr. (46 b). Upperside of the forewing bright yellow-red in the cell nearly to its apex *clarki*, and in cellules 1a—3 as far as the black marginal band, which is 3 mm. in breadth, a thick black longitudinal stripe in the cell and in each of the cellules named; the apical half is blackish, at the apex itself broadly black, usually with a broad reddish subapical band in cellules 4—6 and black longitudinal streaks on the folds; hindwing bright yellow-red above with large, more or less confluent black spots at the base and a sharply defined black marginal band 2—3 mm. in breadth, which sometimes encloses indistinct light spots; black longitudinal streaks are absent or are very short; the inner margin is whitish in cellules 1 a and 1 b; the under surface is much lighter, the hindwing light grey or whitish with distinct streaks on the interneural folds and free basal spots. Recalls *Acraea orinata* (57 a). Cameroons to the Congo. — ab. **egina** Auriv. (= eginoides A. Schultze) *egina*, only differs in having the forewing black in the basal part also, only behind the middle with a red half-band, extending from the hindmargin to the middle of cellule 3. Recalls *Acraea egina* (54 d). Cameroons and Congo.

**Ps. poggei** Dew. is a wonderfully faithful mimic of *Danaida chrysippus*. Both wings red-yellow *poggei*, above with fine black veins, but without black streaks between the veins; the apex of the forewing is black as far as the base of vein 4, with a white subapical band composed of three large spots in cellules 4—6; the black colour forms at the costal margin a narrow streak to the base and at the distal margin as far as the hinder angle a white-dotted band about 3 mm. in breadth. The hindwing shows an unspotted black band about 2 mm. broad and close at the base is somewhat suffused with grey with indications of the black spots of the underside. The under surface of the forewing is similar to the upper, but relieved with grey at the apex; the hindwing, however, has beneath 4 large black spots at the base, the veins white, at the distal margin black, and instead of the marginal band only a black marginal line. Angola, southern Congo and Rhodesia.

**Ps. lucretia** is a widely distributed species and forms several local races. All the forms are black with white or yellow markings. The forewing has a hindmarginal spot, reaching at most to vein 2, a median band composed of 4 (or 5) spots, one at the apex of the cell, one each at the base of cellules 3 and 4 and one in the middle of cellule 2, and a subapical band of 2 spots in cellules 5 and 6. The hindwing has a broad median band and both wings usually before the distal margin two small punctiform spots or dashes in each cellule. The forewing is lighter beneath than above, black-grey with a thick black longitudinal streak in the cell, a triangular black spot at the base of cellule 2 and in the marginal part with black streaks on the interneural folds; the light markings as above. Hindwing beneath yellowish at the base with 6 or 7 rounded black spots, then at least to the middle white or yellowish and at the distal margin more or less broadly darkened with black veins and folds and more distinct submarginal spots than above. — **lucretia** Cr. (46 a). The markings on the *lucretia*, upper surface white or white-grey; the hindmarginal spot of the forewing is almost as long as its breadth at the hindmargin, usually reaches vein 2, but is anteriorly rounded or cut off obliquely; spots 2 and 3 in the median band are sharply defined and moderately large, but the other two much smaller and sometimes dull grey; the median band of the hindwing is of almost uniform breadth, straight-edged, 6—7 mm. in breadth and at the inner margin only reaching vein 1 b; the black basal part does not reach the beginning of vein 2. Sierra Leone to Angola and Uganda. — **protracta** Btlr. only differs in having the median band of the hindwing and *protracta*, the hindmarginal spot of the forewing (at least at the hindmargin) yellowish. Congo. — **expansa** Btlr. (46 a) *expansa*, is distinguished by the increased size of the light markings and by having the distal margin of the hindwing spotted with brown-yellow at the anal angle. The white spots in the median band of the forewing are especially strongly enlarged; the hindmarginal spot is indeed much broader at the hindmargin than in *lucretia* but is much shorter, reaching at most to the middle of cellule 1 b; the median band of the hindwing is white, 10—14 mm. in breadth, distally rounded and reaching the inner margin. East Africa from Delagoa Bay to British East Africa. — ab. **heliogenes** Btlr. only differs from *expansa* in having the light markings light yellow *heliogenes*.



to brown-yellow instead of white; on the other hand the yellow colour of the distal margin at the anal angle of the hindwing is often absent. Nyassaland and German East Africa. — *walensensis* *E. Sharpe* is the most northerly race, occurring in Somaliland and Abyssinia, and apparently cannot always be sharply differentiated from the type-form. The hindmarginal spot of the forewing is often united with the median band and the submarginal spots on the upperside of the hindwing stand out sharply. Whether the black colour at the base of the hindwing reaches vein 2 or not is not mentioned. — *tarquinia* *Trim.* (46 a) is distinguished by the nearly black ground-colour and the much reduced, sometimes indistinct, light spots of the forewing and is also on an average somewhat smaller than the other forms. The median band of the hindwing is light yellowish, moderately broad, distally somewhat rounded, and does not reach the inner margin; the hindmarginal spot of the forewing is very small, yellowish, occasionally entirely absent; the spots of the median band very small and often separated; the subapical dots of both wings absent or indistinct. Larva above bright green, beneath whitish; lateral line, head and the first, strongly elongated spines flesh-red; the last spines light yellow; lives on *Mimusops obovata* and *Chrysophyllum*. Pupa green with yellow lateral line and the head produced to a very long point; recalls the pupa of *Leucophasia sinapis*, but is curved in the opposite direction. Natal to German East Africa. — *comorana* *Oberth.* nearly agrees with the following form and like this differs from all the continental forms in having the black colour at the base of the hindwing above broader, reaching the beginning of vein 2. It is distinguished from *apaturoides* by the hindmarginal spot of the forewing, which is smaller, anteriorly rounded, and only reaches the fold of cellule 1 b. Comoros. — *apaturoides* *Fldr.* (46 a) has the hindmarginal spot of the forewing sharply defined, almost quadrate and anteriorly cut off straight by vein 2, and the black basal part of the upperside of the hindwing extended as far as vein 2; the white markings of the upper surface are slightly tinged with greenish and the white colour on the underside of the hindwing reaches the base or is there only slightly spotted with yellowish. Madagascar.

### 5. *Glaucina* Group.

The only species of this group differs very considerably from all others and is quite isolated.

*glaucina.* **P. *glaucina* Guén.** Forewing black with two large green spots at the base of cellules 1 b and 2; cell short, green with three black spots at the anterior margin; midway between the cell and the apex of the wing 5 small, free green spots in cellules 3—6 and 9, arranged in a curve; small greenish submarginal dots. Hindwing unicolorous black above, with a triangular chalk-white spot at the costal margin in cellule 7 and very small whitish submarginal dots; beneath dark grey, at the distal margin blackish and at the hindmargin yellowish white to beyond the middle. Madagascar; rare.

### 3. Subfamily: *Neptidinae*.

This subfamily embraces only a single genus, which is represented in the Palearctic and Indo-Malayan Regions as well as in the Ethiopian. It is distinguished by the absence of the so-called median spur near the base of the median vein of the forewing and by vein 5 on the hindwing arising nearly at the base. The cells of both wings are open. The precostal vein of the hindwing is straight and at the end forked or weakly curved distad.

### 1. Genus: *Neptis* *F.*

Medium-sized or small butterflies with the wings black above and marked with white or yellow spots and lines.

The light markings which may be regarded as typical for the genus are the following: 1. A longitudinal streak in the cell of the forewing, often broken up into spots or on the upperside absent; 2. A median transverse band, which on the hindwing is always continuous and composed of 8 spots in cellules 1 a—6, but on the forewing is more or less interrupted and consists of spots in cellules 1 a—6 (8 and 9) (for the sake of brevity these spots will here be called discal spot 1 a, 1 b etc.); 3. Four transverse lines before the distal margin, composed of streaks or lunules and thicker and more distinct beneath than above (these are called marginal line 1, 2, 3, 4, reckoning from the proximal one outwards); 4. Three transverse lines or transverse bands in the basal part of the hindwing beneath: the first from the base along the costal margin, the second and third from the inner margin across the cell and extending at most to vein 8. As is shown in the distinguishing characters of the groups, some of these marks are occasionally entirely suppressed or somewhat altered.

Vein 8 of the hindwing is always shortened in the ♂ and sometimes also in the ♀, so that it does not reach the apex but runs into the costal margin.

Most of the species are closely allied and the size and position of the light spots must be carefully studied in order to determine the species correctly.

The earlier stages of the Ethiopian species are still almost entirely unknown. Only those of one species from Bourbon have been described and figured. In the larva of this species the 4th segment has two longer, conical fleshy protuberances, directed anteriorly, and the 3rd segment as well as two or three of the middle

ones very short elevations; the 12th segment has again two short points. Pupa short and thick with two points on the head and several dorsal elevations. — The *Neptis* species are distributed over the whole Region, but do not occur in quite unwooded steppe-districts, preferring localities which are overgrown with trees or shrubs. — The Ethiopian species are divisible into five groups.

### Synopsis of the Groups.

- I. Wings at least beneath with light marginal lines.
  - A. The transverse band of both wings yellow at least above. The marginal lines entirely absent or indistinct above. 1. *Frobenia* Group.
  - B. The light markings on the upper surface white.
    - a) Hindwing beneath at the base light, whitish or yellowish, with numerous brown or black spots, but without white transverse bands. Vein 10 of the forewing arises behind the apex of the cell. 2. *Metella* Group.
    - b) Hindwing beneath at the base black or black-brown with 2 or 3 white transverse bands. Vein 10 of the forewing arises before the apex of the cell.
      - \* Cell of the forewing above unicolorous black or dotted with white; rarely with a curved longitudinal streak, placed close to the anterior margin of the cell and not touching the hindmargin. 3. *Agatha* Group.
      - \*\* Cell of the forewing above with a white longitudinal streak, which either fills up the whole cell or follows its hindmargin, leaving the anterior part free. 4. *Melicerta* Group.
- II. The light marginal lines entirely absent on both surfaces. Discal spot 4 of the forewing absent. 5. *Exaleuca* Group.

#### 1. *Frobenia* Group.

The species of this small group are confined to the Mascarene and Comoro Islands and do not seem to occur on Madagascar, but closely approximate to *N. saclava*, which is found there. They are distinguished by the yellow markings of the upper surface from all the other species except two of the last group. The discal band of the forewing is twice interrupted, in cellules 1 b and 4, and discal spot 4 is absent or small and joined to the spot in 3. In the ♂♂ the underside of the forewing at the hindmargin is grey with a strong mother-of-pearl gloss as far as vein 2.

**N. frobenia** *F.* (48 c). The median band of both wings is placed beyond the middle and on both surfaces *frobenia*. the wings are unicolorous without markings as far as the transverse band. The transverse band of the forewing is divided into three groups of spots, consisting of a very small hindmarginal spot in 1 a and 1 b, a middle division in 2 and 3 and a subapical band in 5—8. Mauritius.

**N. dumetorum** *Bdv.* is very similar to the preceding species, but the cell of the forewing has above white, *dumetorum*. beneath yellowish dots and the transverse band is placed further from the distal margin and beneath, at least on the hindwing, is white. Island of Bourbon; common especially in the damper and more wooded parts of the island.

**N. mayottensis** *Oberth.* (48 c), like the preceding species, has light dots in the cell of the forewing; the *mayottensis*. discal band is light yellow above, yellowish white beneath and on the hindwing broader than in the two preceding species; the hindwing beneath at the base chequered with brown and grey. Island of Mayotte.

**N. comorarum** *Oberth.* (48 c) differs from the others in having the yellow hindmarginal spot of the fore- *comorarum*. wing entirely absent, otherwise agrees almost exactly with *mayottensis*, but is somewhat larger. Island of Grand Comoro.

#### 2. *Metella* Group.

The species of this group differ at once from the others with a white discal band in having the base of the hindwing beneath spotted, not banded with white. The first marginal band of the forewing forms at vein 4 a sharp angle proximad.

**N. saclava** *Bdv.* (48 c). Hindwing beneath at the base with whitish ground-colour and numerous irregular *sacclava*. light red-brown spots, more or less joined together; cell of the forewing above unicolorous or with small white dots, beneath white with irregular light red-brown markings; discal spot 4 of the forewing is absent or very small, dot-like; the hindmarginal spot of the forewing is large and touches the spot in cellule 2 or is only narrowly separated from it; the median band of the hindwing is 4—7 mm. in breadth. Madagascar. — **mar- *marpessa*. pessa** *Hpffr.* (= *pasteuri* *Snell.*) occurs on the continent of Africa from the Cameroons to Abyssinia and Cape Colony and only differs a little in the narrower median band of the hindwing and the smaller, more widely separated, white spots on the forewing.

**N. metella** *Dbl. & Hew.* (48 c) is the only African species in which the underside of the hindwing prox- *metella*.



inally to the median band is yellow with numerous sharply defined, rounded blackish spots. The cell of the forewing at its hindmargin with long white longitudinal stripes, slightly widened distally; the hindmarginal spot very small, discal spots 2 and 3 rather large, not or narrowly separated from one another, discal spots 4—6 small and separated; marginal line 1 is placed far from the distal margin and consists of small, irregularly arranged, free spots, closely approximated to the discal spots; marginal line 4 is absent on both wings above and is only weakly marked beneath; median band of the hindwing 3—4 mm. in breadth, on the under surface distally bounded by black spots; the first marginal line of the hindwing dull and separated by large, free blackish spots from the second marginal line, which is broader and whiter. Sierra Leone to the southern *gratilla*. Congo and the Victoria Nyanza. — **gratilla** *Mab.* only differs in the larger and more sharply prominent white markings. Madagascar.

### 3. Agatha Group.

The forms of this group may be at once recognized by the underside of the hindwing having 2 or 3 continuous white transverse bands at the base (cf. *agatha* underside, 48 d) and by the cell having white dots or being only striped with white at the anterior margin. Some of the numerous forms are very nearly allied.

*nemetes*. **N. nemetes** *Hew.* (48 c). The first basal transverse band on the underside of the hindwing very short and narrow, only covering the base without following the costal margin, which is consequently dark nearly to the base; the second basal transverse band is placed nearer to the base than usual and almost reaches the costal margin. The discal spots of the forewing form only two groups, the first consists of spots 1 a—3, is proximally almost smooth, but distally deeply incised, spot 2 being much longer than spot 1 b; spot 4 is very small or absent; the first marginal line consists in cellules 1 b—5 of very obliquely placed, discontinuous streaks; the cell of the forewing above unspotted or dotted with white, beneath at the anterior margin with a white, curved and distally cleft line. Sierra Leone to Angola and Uganda. — **obtusa** *Rothsch. & Jord.* only differs in the somewhat stumper forewing and the narrower median band of the hindwing, and occurs in Abyssinia.

In all the following species of the group the white basal bands on the underside of the hindwing are typically arranged and the first covers not only the base but also at least the first third of the costal margin. The first marginal line of the forewing is uniformly curved or entirely absent.

*kikideli*. **N. kikideli** *Bdv.* (48 d) differs from the others in having discal spots 1 b and 2 broadly joined together, forming a broad white half-band between the hindmargin and vein 4; discal spot 4 is absent or quite small; the median band of the hindwing is 8—10 mm. in breadth. Madagascar.

*agatha*. **N. agatha** *Stoll.* (48 d). Discal spots 1 b and 2 on the forewing in this and the following species are distinctly separated by an interspace of the ground-colour; discal spot 4 is elongate and as well developed as spots 3 and 5; the cell of the forewing above with three sharply prominent white dots and 3 or 4 duller whitish punctiform spots; the marginal lines of the forewing in cellule 3 and sometimes also in cellule 6 entirely suppressed or indistinct; the discal band of the forewing continuous from vein 2 to the costal margin and at the costal margin as broad as in cellule 2 (spot 6 is longer than or at least as long as the one in cellule 2); the median band of the hindwing reaches vein 7 and is broadest in cellules 4 and 5. Common and widely distributed; Sierra Leone to Abyssinia and Natal. — ab. **lativittata** *Strand* has a broader median band, 8 mm. in cellule 5 of the hindwing. Among the type-form.

*jordani*. **N. jordani** *Neave* (48 d, as *agatha* ab.) is marked almost exactly like *agatha*, but the white discal band of the forewing is narrowed towards the costal margin and is not broader there than in cellule 2. Rhodesia and Katanga.

*livingstonei*. **N. livingstonei** *Suff.* is also similar to *N. agatha*, but the median band of the hindwing is much narrower and only reaches vein 6, its spot in cellule 5 is small and not so long as the one in 2; the first marginal line is thicker and placed further from the distal margin and the marginal lines are not interrupted in cellule 3 of the forewing; the discal band of the forewing is narrowed towards the costal margin, as in *jordani*. German East Africa: Lukuledi.

*seeldrayersi*. **N. seeldrayersi** *Auriv.* (48 d). The cell of the forewing above unicolorous or only with 2 or 3 minute white dots; the marginal lines are continuous, not interrupted in cellule 3 of the forewing; discal spots 4—6 on the forewing are long and narrow, distally somewhat diverging, and project further basally than spots 2 and 3; spots 3 and 4 are narrowly separated by the ground-colour; the median band of the hindwing is narrow, its proximal edge straight, its distal incised at the veins; the second marginal line on both wings beneath much thickened. The first marginal line of the forewing strongly incurved in 1 b, but not nearly reaching the middle of vein 2. Wing-expanse about 60 mm. Congo.

*nysiades*. **N. nysiades** *Hew.* (48 e) agrees almost entirely in the markings with *seeldrayersi*, but is smaller, with an expanse of 44—48 mm., and can be most certainly distinguished by the first marginal line on the upperside of the forewing forming in cellule 1 b an acute angle proximad, which reaches the middle of vein 2; discal spots 3 and 4 on the forewing are more or less broadly separated. Old Calabar to Angola.



— *clarei* Neave apparently only differs in having discal spot 6 on the forewing absent or very narrowly *clarei*. linear and spots 4 and 5 completely joined together. Uganda. — In *metanira* Holl. discal spots 4—6 of the *metanira*. forewing are fully developed, but shorter than in the type-form. Cameroons to the Congo. — *continuata* Holl. *continuata*. (= *conspicua* Neave) only differs in having the discal band of the forewing continuous between vein 2 and the costal margin and the median band of the hindwing almost smooth distally, not incised at the veins. Togo to Angola and Uganda. — ab. *urungensis* Strand is said to differ from *continuata* in the cell of the forewing *urungensis*. above bearing three white dots, while the marginal lines are more distinct. German East Africa: Kitungula.

**N. puella** Auriv. has an expanse of 34—37 mm. and only differs from *nysiades* in discal spots 2—6 *puella*. on the forewing forming a completely continuous transverse band with the proximal boundary nearly straight and the distal arcuate; the first marginal line of the forewing is deeply bent proximad in 1 b, but not sharply angled; the median band of the hindwing moderately broad, narrowed towards the inner margin. Cameroons and Congo. — *nina* Stgr. seems to be the eastern race and only differs in having the transverse band of the *nina*. forewing narrowed towards the costal margin and in the somewhat narrower median band of the hindwing. German East Africa: Usagara.

**N. trigonophora** Btlr. (48 e) is also near *N. nysiades*, but discal spot 4 of the forewing is small and trian- *trigono-* gular; the cell of the forewing is without markings above. German East Africa. *phora*.

The two following species are distinguished by having in the cell of the forewing above and beneath one or two white longitudinal streaks at its anterior margin which follow the curve of the latter.

**N. nicomedes** Hew. has the transverse band of the forewing continuous from the costal margin to vein 2, *nicomedes*. as discal spots 2 and 3 touch one another or are only very narrowly separated; the wing-expanse is only 34—40 mm. In the type-form the discal band of the forewing is nearly straight at its proximal side or only slightly retracted at vein 4. Gold Coast to Angola and Uganda. — In *quintilla* Mab. discal spots 2 and *quintilla*. 3 on the forewing are short and quadrate, much shorter than spot 4, so that the proximal side of the band makes a deep bend at vein 4. Ivory Coast to Angola.

**N. strigata** Auriv. (48 e) only differs from *nicomedes* in its larger size, 45—47 mm., and in having the discal *strigata*. band of the forewing broadly interrupted at vein 4. Discal spots 2 and 3 on the forewing are more or less rounded and separate. Cameroons to Uganda.

The two following forms are nearly allied and differ from all the others in having the second marginal line of the hindwing much thickened and developed into a white transverse band; the hindwing has thus two white transverse bands above. The cell of the forewing has 2 or 3 white streaks at the anterior margin and discal spots 4 and 5 on the forewing are long and narrow and placed far towards the base just behind the apex of the cell; discal spot 6 is absent or very small; discal spots 2 and 3 are small and separate.

**N. biafra** Ward has the discal band of the hindwing about 6 mm. in breadth and the submarginal *biafra*. band (2nd marginal line) of the hindwing is composed of semicircular or lunulate spots. Cameroons; rare.

**N. paula** Stgr. (48 f). The discal band of the hindwing above is only 3—4 mm. in breadth and the *paula*. submarginal band consists of quadrate spots. Sierra Leone.

To this group probably belongs also **N. sextilla** Mab., which is unknown to me. The very full, but never- *sextilla*. theless not quite clear description runs: "Allied both to *sacra* and *kikideli*; the wings are a beautiful black with white transverse band, which on the hindwing is continuous, anteriorly rounded and then narrow and almost entire-margined and on the forewing divided into several spots, two small rounded ones near the base and behind the cell between veins 2 and 4 a large oval spot, which is distally somewhat cleft and separated by the black ground-colour from the large hindmarginal spot. The distal margin is undulate with white incisions and the distal part is uniform black. The under surface recalls that of *kikideli*; the forewing has in the cell two longitudinal rows of white dots, the one along the middle composed of 6 spots and the other, at the costal margin, of 6 streaks; the distal part has at the apex 5 white patches and then 4 large spots of the same colour, which are divided by a black line and placed opposite the apex of the cell; two similar ones at the hinder angle. On the hindwing the median band is oval and does not reach the costal margin; the base is adorned with three curved white transverse bands; before the distal margin run two rows of white spots, the proximal composed of very large lunules and the distal of streaks". Madagascar.

#### 4. Melicerta Group.

The cell of the forewing is entirely filled up with white or has a white longitudinal stripe, which follows its hindmargin and leaves the anterior part of the cell free. Discal spot 4 on the forewing is absent or quite small; hence the discal band of the forewing always consists of three separate divisions, a hindmarginal spots, two spots in 2 and 3 and two or three at the costal margin in 5, 6 and 9. The species may be divided into two subgroups.

##### Subgroup A.

The white longitudinal stripe in the cell of the forewing without free white spot at the end.



*jamesoni*. **N. jamesoni** *Godm.* (48 f) differs from all the other species in that the longitudinal stripe in the cell of the forewing fills up the cell to the anterior margin and is blue-grey in its distal part. A large species, expanding about 60 mm.; discal spots 5 and 6 on the forewing are very long and narrow and distally divergent, discal spot 2 is rounded and much shorter than the spot in 3, which is of the same breadth; discal band of the hindwing about 5 mm. in breadth and distally deeply incised at the veins; the second marginal line is much thickened beneath. Cameroons and Congo region.

*nicoteles*. **N. nicoteles** *Hew.* (48 e). Discal spot 4 on the forewing is long but very narrow, is placed close to vein 5 and forms with spots 5 and 6 a continuous subapical band; in this the species differs from all others. The longitudinal streak in the cell obtusely rounded at the end. Hindwing beneath only with two distinct white basal bands. Gold Coast to Angola.

*nicobule*. **N. nicobule** *Holl.* Discal spot 4 on the forewing is very small, triangular and stands quite free near to the first marginal line; the longitudinal streak in the cell obtusely rounded at the end; the marginal lines of the forewing indistinct or absent in the anterior part of cellule 3; discal spots 5 and 6 on the forewing small and rounded, not larger than spots 2 and 3; expanse 43—45 mm. Ogowe and Ubangi.

*nicodice*. **N. nicodice** *Grünb.* only differs from *nicobule* in having the marginal lines continuous and only interrupted by the veins and discal spots 5 and 6 on the forewing elongate and not oval. The longitudinal stripe in the cell of the forewing is wedge-shaped and the discal band of the hindwing 4.5 mm. in breadth. Hindwing above only with 3 marginal lines. Expanse 48 mm. Spanish Guinea.

*lermanni*. **N. lermanni** *Auriv.* (48 f). Is larger than the preceding species, about 55 mm., and has an elongate discal spot at the costal margin of the forewing in cellule 9; longitudinal stripe on the cell of the forewing somewhat emarginate at its hindmargin and occasionally followed posteriorly by a small dull grey spot. Congo.

*nebrodes*. **N. nebrodes** *Hew.* The longitudinal streak in the cell of the forewing narrow, pointed at the end, and before the end deeply incised on the anterior side; discal spot 4 on the forewing small and triangular, placed free; discal spots 5 and 6 elongate and separated; median band of the hindwing anteriorly somewhat narrowed; marginal lines dull and indistinct; expanse about 54 mm. Togoland to Angola; rare.

*mixophyes*. **N. mixophyes** *Holl.* has an expanse of only 32 mm., marginal lines sharply prominent and the longitudinal stripe in the cell of the forewing not incised before the end. Otherwise it agrees almost entirely with *nebrodes*. Ogowe.

#### Subgroup B.

The white longitudinal stripe in the cell of the forewing with a very prominent, small, free, triangular white spot at the end. Discal spot 4 on the forewing is small and triangular and placed quite free on the first marginal line. The marginal lines of the forewing more or less broadly interrupted in cellule 3.

*melicerta*. **N. melicerta** *Drury* (48 e). Discal spots 5 and 6 on the forewing narrow and completely separated or only touching at the inner angle; median band of the hindwing 3—4 mm. in breadth; the second marginal line on the underside of the hindwing much thickened. A common species, occurring from Sierra Leone to Angola and Abyssinia. — ab. **melicertula** *Strand* differs in the purer white markings and the somewhat larger discal spots on the forewing. Cameroons.

*goochi*. **N. goochi** *Trim.* (48 f) is probably merely the East African race of *melicerta* and only differs in having discal spots 5 and 6 on the forewing broader and more or less completely joined together, the median band of the hindwing broader, about 5 mm. in breadth, and especially in the second marginal line on the underside of the hindwing being not or but little thickened. Natal to Kilimandjaro.

#### 5. Exaleuca Group.

The species of this group differ quite considerably from those of the others. The light marginal lines are entirely absent on both surfaces, as are also the white basal bands on the underside of the hindwing. The cell of the forewing is unicolorous without spots or streaks. The discal band of the forewing is composed of three divisions, a hindmarginal spot, a double spot in 2 and 3 and a subapical band in 5, 6 (8 and 9); discal spot 4 is entirely absent. The species form two natural subgroups.

#### Subgroup A.

Distal part of both wings above and beneath with black longitudinal streaks on the interneural folds. The discal band of the hindwing is about 6 mm. in breadth and the discal spots of the forewing are elongate and angled; the hindmarginal spot is large and joined to discal spot 2 or only narrowly separated from it. The black marginal band on the upper-side of the hindwing is at least 6 mm. in breadth.

*exaleuca*. **N. exaleuca** *Karsch.* Discal spots of the forewing and discal band of the hindwing white; wings above dark brown, beneath glossy bronze-brown; fringes with white spots on the folds. Expanse 52 mm. Cameroons and Congo.

**N. ochracea** *Neave*. Discal spots of the forewing and discal band of the hindwing ochre-yellow; wings *ochracea*. above dark brown, beneath brown-yellow. Expanse 49 mm. Uganda. Probably only a race of *exaleuca*.

### S u b g r o u p B.

Interneural folds not dark, but the veins on the underside more or less blackish. The discal band of the hindwing is only 3—4 mm. in breadth and the discal spots of the forewing are small and rounded. The hindmarginal spot of the forewing is small and broadly separated from discal spot 2.

**N. incongrua** *Btlr.* (48 f). All the markings pure white; the discal band of the hindwing is placed *incongrua*. somewhat behind the middle and does not cover the base of cellule 3; wings above nearly black; beneath bright yellow-brown with the markings edged with black; the forewing on both surfaces shortly beyond the apex of the cell with 3 or 4 white dots in cellules 4—6 and 10; fringes white-spotted. Nyassaland and German East Africa.

**N. woodwardi** *E. Sharpe* differs from *incongrua* in the absence of the white dots beyond the apex *woodwardi*. of the cell on the forewing, while the discal spots of the forewing are smaller and may even be entirely absent in cellules 1 a and 1 b and the median band of the hindwing is placed nearer to the base, covers the base of cellule 3 and is ochre-yellowish. Uganda.

### 4. Subfamily: **Marpesiinae.**

This subfamily may be easily known by the characters cited in the synopsis (p. 122). It is only represented in the Ethiopian Region by two nearly allied species, but many more occur in the Indo-Malayan and Neotropical Regions; cf. vol. IX, p. 570—578 and plates 121 and 122.

### 1. Genus: **Cyrestis** *Westw.*

The African species differ somewhat in shape and in not having the forewing incised at the distal margin from the typical species from South Asia and were consequently regarded by Dr. L. MARTIN, who monographed the genus in 1903, as types of a separate subgenus (*Azania*).

They are delicately built butterflies of medium size, and bear on a white ground 10 dark, black-brown, transverse lines or bands. These transverse lines or bands are arranged as follows: the first covers the base of the forewing and reaches the inner margin of the hindwing somewhat before the anal angle; the second runs before the middle of the cell of the forewing and terminates in cellule 1 c of the hindwing some distance before the anal angle; the third runs somewhat distally to the middle of the cell of the forewing and close beyond the apex of the cell of the hindwing, reaches vein 2 and then makes a curve towards the inner margin; the fourth covers the discocellular of the forewing and extends at most to vein 3 on the same wing; the fifth is likewise very short, only extending from the costal margin to vein 4 on the forewing and placed shortly beyond the apex of the cell; the sixth begins at the costal margin of the forewing almost midway between the cell and the apex of the wing, runs in a nearly straight direction to vein 3 of the hindwing and then bends round in a curve towards the inner margin, which it reaches at the same point as the third transverse band; the seventh is composed of lunules or streaks and reaches the inner margin of the hindwing at the end of vein 1 b; the eighth is wanting on the forewing, but on the hindwing extends in an almost straight line from the apex to the anal lobe; the ninth is very fine and runs on both wings just before the distal margin; the tenth forms a fine marginal line.

At the anal angle of the hindwing there is an irregular, dark-pupilled eye-spot.

The earlier stages of the African species are unfortunately unknown. Of some Asiatic species, however, the larvae are known. These are characterized by the head bearing two long spines and segments 5 and 12 a long spine each on the dorsum. By these unpaired dorsal spines these larvae are at once distinguished from all the other Nymphalid larvae of the Old World; those of the American *Marpesia*, from which the group has its name, show similar single spines.

**C. camillus** *F.* (49 b). The transverse bands, especially the second, third and sixth, are broad, edged *camillus*. with blackish and filled in with bronzy brown; the anal lobe and anal angle of the hindwing beneath continuously filled in with black. Sierra Leone to the Congo and Abyssinia. — ab. **nigrescens** *Martin* only differs in *nigrescens*. having the bands filled in with smoke-black and the yellow colour at the anal angle of the hindwing replaced by blue-grey. Central Africa.

**C. elegans** *Bdv.* (49 b). The transverse bands are finer and lighter, some of them occasionally indis- *elegans*. tinct or obsolete; the anal lobe of the hindwing beneath with two well separated, blue-dusted, black spots; the ground-colour purer white. Madagascar. — **sublineata** *Lathy* occurs in East Africa and only differs very *sublineata*. little from the Madagascar form; in general only in having the transverse lines of the hindwing distinct on the underside also; in the type-form they are there for the most part indistinct.



5. Subfamily: **Eunicinae**.

This subfamily belongs essentially to the Neotropical Region and is only represented in the Old World by the Ethiopian genus *Crenis*. It is distinguished by the forewing having the lower median as far as vein 2 and the base of vein 12 slightly but distinctly thickened. Veins 10 and 11 of the forewing arise free from the anterior margin of the cell and the cells of both wings are closed.

1. Genus: **Crenis** Bdv.

Some authors employ HÜBNER's name *Asterope* for this genus. HÜBNER, however, only referred three species to *Asterope*: *amulia*, *sapphira* and *theane*, of which *amulia* was removed as long ago as 1833 by the erection of the genus *Crenis*, so that according to the rules of nomenclature laid down by the International Zoological Congresses the name *Asterope* must be left to one of the other species. SCUDDER also stated quite correctly in 1875 that *sapphira* must be considered as the type of *Asterope*. The action of some lepidopterists in regarding the first species as typical stands in manifest contradiction to the international rules of nomenclature, takes no notice of the whole previous history of the name and would consequently occasion the most wholesale and entirely unnecessary revolutions in the existing appellations of the commonest butterflies. Among LINNÉ's generic names we should have to employ *Papilio* for *priamus*, *Sphinx* for *ocellata*, *Bombyx* for *atlas*, *Noctua* for the Cossid *Duomitus strix*, *Geometra* for *lactearia*, *Tortrix* for *Hylophila prasinana*!!, *Tinea* for *Aphomia sociella* (a Pyralid!), and in other insects the alterations would be quite as great. Among other generic names we should have to use *Pieris Schrank* for *apollo*, *Hesperia F.* for *cupido*, *Cupido Schrank* for *virgaureae*, *Erebia Dalm.* for *aegeria*, *Euploea F.* for *plexippus*, etc. It is therefore to be hoped that everyone who has taken the trouble to investigate the consequences of this doctrine will strongly oppose it.

*Crenis* is however so extremely near the South American genus *Eunica* that it is a question whether it can be permanently retained as a separate genus.

The species prefer wooded districts and have a short and weak flight; several of them often fly together and they frequently rest on the stems and branches of trees; they are fond of drinking the sap of wounded trees and fruits. Larva cylindrical with 6 rows of small spines, which are more or less branched. Pupa with two points on the head, conically raised mesothorax and angled shoulders.

The species are divisible into natural groups.

## First Group.

Forewing broad with the distal margin straight or slightly convex and the apex broadly rounded. The wings above light violet-blue to greenish or brown with strong violet reflection. Both wings beneath with bright orange-yellow ground-colour or at least the forewing at the base to the apex of the cell bright orange or ochre-yellow.

*benguelae*.

**C. benguelae** Chapm. (49 b) may be at once known by having the underside of the forewing ochre-yellow only at the base as far as the apex of the cell and in cellule 1 b to vein 2, then bluish green with large black discal spots and two rows of black spots before the distal margin; the hindwing is blue beneath with 4 transverse rows of black dots or streaks, black marginal line, four large red-yellow spots in the basal part and two curved transverse bands of the same colour behind the middle; these transverse bands unite at vein 1 b and border the blue, black-pupilled eye-spots at both sides. Above the wings are light grey-blue in the ♂ with white fringes, black marginal spots, triangularly lengthened on the forewing, at the extremities of the veins and a submarginal row of black dots, which, however, are absent in cellules 2 and 3 of the forewing. In the ♀ the wings are greenish above with broad black marginal band on the forewing and a large black spot, not sharply defined, in the middle behind the apex of the cell. Congo and Angola.

*pechueli*.

**C. pechueli** Dew. Both wings pale grey-blue above, with whitish reflection; fringes white with black spots at the extremities of the veins; a fine black marginal line, thickened at the veins, and just before the distal margin a row of black dots or streaks and a complete or almost complete postdiscal row of black dots. Forewing beneath bright goldy ochre-yellow to beyond the middle without markings, then as above in cellules 1 b—8 with black postdiscal dots, the first three, in cellules 6—8, margined with grey-blue; a narrow grey-blue marginal band, proximally bounded by the black submarginal spots, and a fine black marginal line, not thickened at the veins. Hindwing beneath very variegated, with grey-blue ground-colour, two irregularly dentate black transverse lines, one before and the other at the middle, a row of black postdiscal dots and a black submarginal line; at the base and between the lines in cellules 1 b and 4—7 are placed large yellow-red spots and the postdiscal dots on both surfaces are bounded by a similarly coloured arcuate band 1—2 mm. in breadth. The ♀ only differs in having the cell and a subapical spot on the upperside of the forewing blackish. Congo, Angola, Ovamboland and on the upper course of the Zambesi.



**C. rosa** Hew. (= *mafiæ* Stgr.) (49 a) is to some extent intermediate between *pechueli* and *amulia*; it differs from the preceding in having on both surfaces of the forewing only 4 postdiscal spots (in cellules 5—8), of which the posterior one is usually much larger on the underside than the rest; the yellow markings on the under surface of the hindwing are usually lighter and more confluent than in *pechueli*. In the ♀ the dark markings on the upperside of the forewing stand out more strongly and the distal margin is more or less broadly darkened. Delagoa Bay; Portuguese, German and British East Africa.

**C. amulia** Cr. (49 a). The upper surface in the ♂ is unicolorous dark copper-brown with violet reflection, without markings; in the ♀ on the other hand there is a dark spot at the apex of the cell and a lighter transverse band behind the cell on the forewing and the hindwing has distinct postdiscal dots. Beneath both wings are bright ochre-yellow with almost exactly the same markings as in *rosa*, but with the grey-blue rings and spots even more reduced. Sierra Leone to Angola.

### Second Group.

Forewing narrower and more pointed than in the species of the first group and with the distal margin more or less deeply emarginate. The under surface of the forewing is often more or less yellowish, but not bright orange-yellow, and the hindwing has a grey or brownish ground-colour beneath.

**C. occidentarium** Mab. (48 g). In the ♂ the wings are nearly black above with a broad brownish marginal band on the hindwing, in which the postdiscal eye-spots stand out more or less distinctly; in the ♀ this band has a grey reflection and is continued on the forewing as far as vein 6, but narrowed, the forewing has in addition a red spot at the apex of the cell and three small light spots at the costal margin midway between the cell and the apex. The under surface is almost alike in both sexes; the forewing glossy yellow-brown (♂) or brown-yellow (♀) with broad black transverse band behind the cell between the costal margin and vein 3 and grey apex; the hindwing grey with blackish markings. Sierra Leone to North Angola and Abyssinia. — **penricei** Rothsch. & Jord. only differs in having the ground-colour on both surfaces lighter and the subapical black transverse band on the underside of the forewing smaller. Angola.

**C. morantii** Trim. (48 g). Both wings in the ♂ unicolorous dark grey above without markings, in the ♀ the hindwing is faintly tinged with yellowish in the marginal part and the forewing is blackish in and behind the apex of the cell and has some light spots in and behind the black colour. The under surface is similar to that of *C. occidentarium*, but much lighter. The species nearly approaches the preceding, but is considerably smaller and lighter coloured. Natal and Nyassaland.

**C. boisduvali** Wallengr. (48 g) is a small, dark species. In the ♂ the wings are dark brown above, before the distal margin of the hindwing more or less relieved with yellow-brown and with black postdiscal dots in cellules 2—6; in the ♀ both wings are lighter and the forewing has at the costal margin the usual yellowish discal and subapical spots of the ♀. The underside of the forewing in both sexes is yellow with grey apex, black subapical band and 1 or 2 black spots at the apex of the cell; the underside of the hindwing is distinguished by its chequered colouring of brown-grey, white-grey and black, the rings of the eye-spots stand out distinctly and are brown or only slightly yellowish. — The larva lives in Natal on *Excoecaria reticulata*, a common tree there. It has a dark brown head and is laterally light brown and dorsally rust-brown; each segment bears six short black spines with fine bristles; the spines of the 10th to 12th segments are distinctly branched. Pupa light brown with darker markings; its head has two obtuse points. The species is distributed from Sierra Leone to Natal, Brit. East Africa and Uganda and is common in Natal. — **kaffana** Rothsch. & Jord. only differs on the under surface in the darker ground-colour of the forewing and the more uniform, olivaceous ground of the hindwing. Abyssinia.

**C. dubiosa** Strand is unknown to me and is described as follows: "Above about as *boisduvali* Wallengr., dark brown with slight olivaceous gloss, occasionally perhaps almost pure black; fringes with very slight pale greyish gloss, on the forewing with traces of whitish spots; this wing is a little darker in the cell and the costal area than posteriorly; beneath it is ochre-yellow with grey-brownish margin and a large black spot between the cell and the apex, as well as a smaller spot in the cell itself at the discocellular; the distal and larger of these spots is 4 mm. in length, fully as broad, and connected posteriorly with the discocellular spot; towards the costal margin in particular fine blackish subterminal spots or streaks are present. The apex of the forewing beneath and on the underside of the hindwing the basal half and the eye-spots violet, the latter narrowly bordered with greyish and with darker pupils; the posterior half grey-brownish, slightly olivaceous and with a violet-tinged marginal band about 2 mm. in breadth; the eye-spot in cellule 4 is only half as large as the others and bears no black pupil, the one in cellule 7 is also somewhat smaller than the rest, but otherwise like them; in the basal area are placed in a transverse row 3 black lines, basally convex, lighter-marked proximally. The species is no doubt nearly allied to *morantii* Trim. and possibly only a variety of it". German East Africa.



- howensis*. **C. howensis** Stgr. (48g; ♀ as *umbrina*) is very near to *C. boisduvali* and beneath agrees almost entirely with it. Above the ♂ differs in a broad blackish longitudinal band at the costal margin of the forewing and the ♀ in its larger size and the lighter yellow-brown ground-colour of both wings; in consequence of the lighter ground the black colour at the costal margin of the forewing in the ♀ stands out more sharply than in *boisduvali*. Madagascar.
- natalensis*. **C. natalensis** Bdv. In the ♂ both wings are light brownish above with strong yellowish gloss and before the distal margin broadly yellowish; the black submarginal streaks are distinct, likewise the postdiscal dots, which, however, are absent or indistinct in cellules 2—4 of the forewing; underside of the forewing light grey-yellow, at the apex grey with sharply prominent black postdiscal dots in (4) 5—8, before these somewhat darkened, but not spotted with black; hindwing light grey beneath with ochre-yellow or brownish transverse lines and dull yellow rings to the eye-spots. The ♀ differs considerably from the ♂, the apex of the forewing above being deep black as far as vein 2 with two oblique transverse rows of yellow spots, the discal row consisting of two spots in cellule 3 and at the apex of the cell and the subapical of three spots in 5—7; in this it strongly recalls the ♀ of *C. trimeni* (49 a). From *C. boisduvali*, *natalensis* differs in its larger size, lighter upper surface with distinct postdiscal dots on the forewing and especially in the much more weakly marked and more uniform under surface. Natal and Transvaal.
- garega*. **C. garega** Karsch (= *ansorgei* Rothsch. & Jord., *natalensis* Hpffr.) "agrees in the markings of the upper surface with *C. natalensis* Bdv., except that the broad dark brown costal border of the forewing, enclosing lighter spots, is narrower and terminates posteriorly at the 3rd median (= vein 4) almost in a straight line; the under surface of the hindwing shows a more striking difference inasmuch as the pupilled rings of the dark undulate marginal line are removed further proximad than is the case in *C. natalensis* Bdv. In addition the forewing is narrower, its shape different, the apex being more distinctly truncate, the hinder angle in particular running out into more of a point, the distal margin more rounded and not undulate". The sexes are coloured almost alike; the ♂ has like the ♀ a light apical macular band on the forewing, which in the ♀ is interrupted; in the latter there is further in cellule 3 a large, light ochre-yellowish spot; the under surface of the hindwing is very slightly marked with brownish, not blackish. Cameroons, Mozambique, Uganda, Abyssinia.
- amazoula*. **C. amazoula** Mab. is a third species nearly allied to *natalensis*. In the ♂ the wings are light ochre-yellowish above with narrow dark marginal band, reaching the submarginal dots, and blackish longitudinal stripe at the middle of the costal margin of the forewing; in the ♀ both wings are darkened in the basal part and the forewing at the apex of the cell blackish with a yellow transverse spot; the under surface of the hindwing has the ground-colour light grey, uniform or darkened at the base, with the rings of the eye-spots slightly ochre-yellowish; the underside of the forewing in the ♂ without black markings, in the ♀ broadly blackish at the costal margin. Madagascar.
- umbrina*. **C. umbrina** Karsch, like the last three species, has distinct black postdiscal dots in cellules 1 b, 4—7 on the forewing above, but the ground-colour of the upper surface is much lighter, light grey or light clay-coloured; the apex of the forewing is grey-brown above and has in the ♂ the same light yellow spots as in the ♀ of *natalensis* or *trimeni* (49 a); the under surface of the forewing has distinct black transverse spots beyond the apex of the cell and the hindwing a whitish ground-colour with light grey or brownish (not ochre-yellow) markings. Togoland, Unyoro, Uganda.
- trimeni*. **C. trimeni** Auriv. (49 a) is likewise similar to the preceding species and especially to *C. natalensis*, but is at once distinguishable from them all by the light blue-grey ground-colour and the very large, thick, light orange-yellow rings of the eye-spots on the hindwing beneath. In the ♂ the black and yellow spots in the apical part of the forewing are much more indistinct than in the ♀. Congo, Angola, German South-West Africa, Cape, Delagoa Bay.
- consors*. **C. consors** Rothsch. & Jord. nearly approaches the preceding species. The sexes are quite alike and can most easily be distinguished from *trimeni* by the darker blue-grey ground-colour of the underside of the hindwing, while the eye-spots have smaller rings, only basally ochre-yellowish. Angola, Zambesi.
- madagascariensis*. **C. madagascariensis** Bdv. (49 a) differs from all the other species in having both wings bright yellow-brown above, with the apical half of the forewing black; beneath the hindwing and the apex of the forewing are whitish grey and the former has no transverse lines and only very indistinct grey eye-spots. The ♀ is larger and otherwise only differs from the ♂ in bearing 2 or 3 small yellow subapical spots in cellules 6—8 of the forewing. Madagascar.

#### 6. Subfamily: Eurytelinae.

The genera of this subfamily may be known at once by having vein 12 of the forewing inflated at the base into a large ellipsoid bladder.

Here belong small to medium-sized butterflies with broad, rounded wings, at the distal margin undulate or occasionally strongly dentate or angled, which are quite differently marked in the different genera.

The larvae, as far as they are known, have two very long, finely branched spines on the upperside of the head and 4—6 short prickly spines on each segment of the body. Pupa with two short, obtuse



points on the head and laterally emarginate wing-cases; a deep dorsal depression between the abdomen and the thorax.

In the Ethiopian Region five genera occur, which can easily be distinguished by the following synopsis.

#### Synopsis of the Genera.

##### A. Eyes naked.

α) Cell of the hindwing closed, rarely almost open. Wings without white transverse band.

\*. Distal margin and apex of the forewing rounded.

a) Veins 3 and 4 of the hindwing from the same point, but not stalked. Middle discocellular of the hindwing curved and shorter than the lower, which is sometimes very indistinct or absent.

1. *Byblia*.

b) Veins 3 and 4 of the hindwing stalked. Middle discocellular of the hindwing straight and longer than the lower.

2. *Mesoxantha*.

\*\*. Distal margin of the forewing distinctly angled at vein 6; apex acute

3. *Ergolis*.

β) Cell of the hindwing quite open. Wings with white transverse band on both surfaces.

4. *Neptidopsis*.

##### B. Eyes densely hairy. Cell of the hindwing closed.

5. *Eurytela*.

#### 1. Genus: *Byblia* Hübn.

The *Byblia* species have brown-yellow to red-yellow wings with black markings, which are much more strongly developed in the ♂ than in the ♀. The arrangement of the black markings on the upperside of the ♂ can best be seen from the figure of *vulgaris* (49 e). The under surface of the forewing agrees pretty nearly with the upper, but is paler; the underside of the hindwing, on the contrary, is very varied in colouring and is differently marked in the different forms.

The genus is also represented in South Asia and has three species in Africa, of which, however, the third is scarcely more than an insular race of the second. In all the species there is a seasonal form which is characterized by the deep chestnut-brown transverse bands on the underside of the hindwing. The species may be best distinguished by the characters cited in the following synopsis.

#### Synopsis of the Species.

A. The black costal margin on the upperside of the forewing sends out three black transverse streaks into the cell and then beyond the apex of the cell a narrow transverse streak, sharply defined distally and placed almost vertically to the costal margin, reaching vein 4; hence the yellow spot at the end of the cell is quadrate, bounded by veins 4 and 6. The upperside of the hindwing somewhat before the middle with 1 (♂) or 2 (♀) transverse rows of black dots and in the ♀ yellow to the base. 1. *B. ilithyia*.

B. The black costal margin on the upperside of the forewing, as in the preceding species, sends out three black streaks into the cell, but is then widened behind the cell into a large black transverse spot, reaching vein 4 and on vein 5 forming a tooth distally, which is usually joined to the black submarginal band; hence the yellow spot at the end of the cell is almost triangular and is usually bounded anteriorly by vein 5. The upperside of the hindwing black at the base, then with a broad light transverse band, in which, however, there are no black dots.

a) The broad discal band on the underside of the hindwing is proximally nearly straight or gently curved, at most obtusely angled at vein 5. 2. *B. aeheloia*.

b) The broad discal band on the underside of the hindwing has a distinct proximal excision in cell 5. 3. *B. anvatara*.

**B. ilithyia.** Hindwing beneath always with white, almost continuous marginal line and four brown or brown-yellow transverse bands, which are separated by three white bands or rows of spots. — *ilithyia* *Drury* (49 e). The transverse bands on the hindwing beneath brown with distinct black bordering; the third band distally black with white dots. f. *polinice* *Cr.* only differs from the type-form in the lighter, more yellowish transverse bands on the hindwing beneath. f. *badiata* *Grünb.* is distinguished by having the bands on the hindwing beneath broader and unicolorous dark chestnut-brown; the two proximal ones, as in the other forms, are bounded by black dots and streaks, but the third is not or only indistinctly margined with black and has no white dots at the distal side; transitions to the other forms are not rare. — Larva green with brown head, two long green spines on the head, and on each segment six short, wart-like spines, aculeate at the tip; lives in Natal on a common, climbing species of the genus *Tragia*. The species occurs everywhere on the continent of Africa and in Arabia.



*acheloia*. **B. acheloia** Wallengr. (49 b). The type-form may be at once known by the entire absence of the white dots at the distal margin of the hindwing beneath and has broad, dark chestnut-brown transverse bands on the underside of the hindwing; the white or whitish bands placed between them are narrow and often broken up into spots; the underside of the forewing is broadly chestnut-brown at the distal margin with 3 or 4 whitish subapical spots in cellules 5—8. South Africa to Abyssinia. f. **vulgaris** Stgr. (49 c upper surface) is the rainy-season form of *acheloia* and has like this on the underside of the forewing a broad, continuous, costally widened distal band, which, however, is lighter brown or yellow; the hindwing is very different beneath, having distinct white marginal dots and lighter transverse bands; the third band is distally broadly black with white dots. South Africa to Abyssinia. An aberration with large white longitudinal spots in cellules 2, 3 and 5 on the forewing has been named **albitrimacula** by STRAND. — **crameri** Auriv. (49 c, as *vulgaris* underside) is very similar to the preceding form, only differing in the forewing having beneath at the distal margin in cellules 4—8 short and almost free yellow submarginal spots; it is the West African race and is distributed from Sierra Leone to Angola and Uganda. f. **fasciata** Rothsch. & Jord. is the rare dry-season form of *crameri* and is as yet only known from the Gold Coast; on the underside of the hindwing it resembles the form *acheloia*. — **boydi** Dixey differs from the others in the very small, anteriorly pointed, yellow discal spot in cellule 1 b on the upperside of the forewing; otherwise it most nearly approaches the form *crameri*, but has very dark black-brown transverse bands on the hindwing beneath. Socotra.

*anvatara*. **B. anvatara** Bdv. The marginal band on the underside of the forewing as in *acheloia* and *vulgaris*; *seriata*. the hindwing beneath agreeing with that of *vulgaris*. Madagascar and Comoros. f. **seriata** Rothsch. & Jord. is the dry-season form and agrees very exactly with *acheloia* as regards the colouring of the hindwing beneath. Madagascar and Comoros.

## 2. Genus: **Mesoxantha** Auriv.

The sole species of this genus was formerly referred to *Eurytela*, but differs entirely in the shape of the wings and is distinguished from all other Eurytelids by the peculiar markings. The under surface of both wings shows distinct mimetic relations with the Acraeids. The early stages are unknown.

*ethosea*. **M. ethosea** Drury (49 b). Both wings black above, in the middle broadly light yellow, the light yellow colour on the forewing covers cellules 1 b—3 except at the distal margin and a narrow stripe of the cell and in the ♀ also a great part of cellule 4; on the hindwing only the margins are black. The under surface is dull ochre-yellowish or grey-yellow with black veins and with a black dot in the cell of the forewing and several at the base of the hindwing, of which three at the inner margin are ring-shaped with yellow centres; distal margin with whitish spots, accompanied proximally by thick black streaks on the folds. Sierra Leone to Angola and Toro.

## 3. Genus: **Ergolis** Westw. <sup>Borisd 1826</sup>

Medium-sized butterflies with broad dark-coloured wings and without light spots. The forewing has sharp apex and angled distal margin; the hindwing is rounded with the margins undulate. The markings consist in all the species of black or brown transverse lines or bands.

*enotrea*. **E. enotrea** Cr. (49 c). The ground-colour of the upper surface at the base and the distal margin black-brown (♂) or reddish brown (♀), in the middle more or less extended blue-grey; the transverse lines fine and but little prominent. Sierra Leone to Angola and Kavirondo.

*pagenstecheri*. **E. pagenstecheri** Suff. (= *murina* Bartel) (49 c). Both wings above with uniform grey ground-colour and brown transverse bands, of which the discal is broad and continuous; a small white subapical spot at the costal margin of the forewing; the under surface is much darker, with red-brown bands; distal margin of both wings strongly undulate or dentate. Cameroons, Ruwenzori, Ruanda and German East Africa. ab. **aurantiaca** Heron only differs in the lighter, yellow-grey ground-colour and the reddish transverse markings of the upper surface.

*alphaea*. **E. alphaea** Drury was known as long ago as 1782 from a specimen from Sierra Leone figured and described by DRURY, but has not been found since. The figure is perhaps badly executed and does not agree well with the description. According to the description the wings are clay-coloured above with a light spot near the apex of the forewing and fine undulate indistinct transverse lines. The description fits fairly well to *pagenstecheri*.

*actisanes*. **E. actisanes** Hew. (48 d) is larger than the other species and has the ground-colour of the upper surface uniform dark grey-brown with blackish transverse lines, between which the colour is often red-brown; the under surface is darker and the distal margin of both wings much more weakly undulate than in the other species. Cameroons to the Congo.



#### 4. Genus: **Neptidopsis** *Auriv.*

Small black or blackish butterflies with white markings, distal margin of both wings undulate or dentate. The white markings strongly recall those of *Neptis* and consist on the upper surface of a discal band on the forewing, more or less broken up into spots, and a broad continuous median band on the hindwing; before the distal margin run 3 or 4 fine white transverse lines and on the hindwing there is a row of large black spots between the median band and the marginal lines. The white discal spots in cellules 1a—4 of the forewing are divided by a dark transverse line, sometimes sharply dentate. On the under surface, besides the white markings of the upperside, there are also in the basal part several white spots or bands and in addition the marginal lines are thickened and more or less confluent.

Pupa with two broad points on the head, the shoulders with ear-shaped excisions, the upper and posterior margins of the wing-cases arched, a point on the mesothorax and another at the base of the abdomen.

**N. ophione** has the distal margin of both wings almost uniformly curved and strongly undulate, but only feebly and obtusely projecting at vein 6 of the forewing. The white transverse band of the forewing is broken up into spots between the hindmargin and vein 4 and the spots are separated by straight streaks; the median band of the hindwing not irregularly incised; the basal part of both wings beneath with separated, sharply defined white markings; the black postdiscal spots of the hindwing all large and distinct, beneath light-ringed. — **ophione** *Cr.* (49 d). The hindwing blackish at the anal angle and apex. Sierra Leone to Angola and Uganda. — ab. **nucleata** *Grünb.* "The white subapical spot in cellule 2 on the forewing above encloses a sharp black transverse spot of not quite 1 mm. in breadth and 2 mm. in length; the subapical spot in cellule 1 b also contains at its anterior margin traces of a black spot." Ruwenzori. — **velleda** *Mab.* (49 d) is the East African race and may be easily known by having the hindwing more or less red-yellow at the anal angle and at the costal margin just before the apex. German East Africa to Abyssinia.

**N. fulgurata** has the distal margin very irregularly dentate, sharply angled at vein 6 on the forewing and deeply excised between veins 4 and 6 on the hindwing. The white median band of the hindwing is irregularly excised and forms a strong distal projection at vein 6; the white discal band of the forewing is continuous as far as vein 4 and divided by a sharply dentate dark line. — **fulgurata** *Bdv.* The under surface of both wings white or light grey in the basal area and at the distal margin, without distinctly separated spots. Madagascar. — **platyptera** *Rothsch. & Jord.* (49 d). The under surface of the wings with distinct white spots and lines at the base and with sharply prominent brown and white markings in the distal part. Above the markings are almost as in the type-form. German and British East Africa. — **pseudoplatyptera** *Strand* has the median band of the hindwing broader, 5—7 mm. in breadth, and basally more rounded. The under surface, however, as in *platyptera*, with white submarginal band 2 mm. in breadth. Madagascar.

#### 5. Genus: **Eurytela** *Bdv.*

This genus differs from the others in the densely hairy eyes. The type of markings on the upper surface is simple: the ground-colour is black or black-brown, with a common light transverse band running behind the middle and extending from the inner margin of the hindwing just before the anal angle to vein 4, 5 or 6 of the forewing. On the under surface also the median band is more or less distinctly present and in addition there are irregular transverse rows or lines of red-brown spots, which are sometimes bordered with silver-white.

Larva with two long, sharp spines on the head and four short spines on each segment, two on the dorsal surface and one below each spiracle. — Pupa with two points on the head, sharply margined wing-cases, projecting at the shoulders and at the posterior edge, and pyramid-shaped dorsal surface.

**E. hiarbas.** The transverse band on the upper surface white or occasionally yellow, but then only 4 mm. in breadth in the middle of the hindwing. — **hiarbas** *Drury* (49 e). Distal margin of the forewing obtusely projecting at vein 6, that of the hindwing rounded. The white transverse band reaches vein 5 or 6 on the forewing, is 6—6.5 mm. in breadth on the hindwing and 3—5 mm. at vein 3 of the forewing. Sierra Leone to Angola. — **abyssinica** *Rothsch. & Jord.* Shape of the wings as in *hiarbas*; the white transverse band only reaches vein 4 on the forewing and is almost as narrow as in *angustata*; forewing reddish brown at the distal margin. Abyssinia. — **lita** *Rothsch. & Jord.* is the East African race and only differs from *lita*. *angustata* in having the wings somewhat more obtusely angled and the upperside of the forewing black as far as the distal margin. Nyassaland, German East Africa, British East Africa. — **angustata** *Auriv.* Forewing sharply angled at vein 6 and the hindwing more sharply dentate at veins 3 and 4; the white transverse band only reaches vein 4 on the forewing, is anteriorly strongly pointed and on the hindwing only 3—4 mm. in breadth; the forewing above more or less broadly red-brown at the distal margin. ab. **flavescens** *Auriv.* has the transverse band yellow, but otherwise entirely agrees with *angustata*. Natal. — Larva grass-green with white lateral line composed of oblique streaks, head dark brown; lives on *Tragia*. Pupa green with black streaks and dots, or flesh-coloured with green markings. South Africa.



**E. dryope.** The transverse band on the upper surface is yellow, in the middle of the hindwing at least *dryope*. 7 mm. in breadth and usually placed much nearer to the distal margin than in *hiarbas*. — **dryope** Cr. The chestnut-brown spots on the under surface large and separated, not united into continuous transverse bands; in cellule 1 b of the forewing there are either only two of these spots or three, of which, however, the two distal ones are placed very near together; the distal margin of the forewing at vein 6 obtusely rounded, scarcely angled; the dark distal margin on the upperside of the hindwing only 2—4 mm. in breadth. Sierra *alinda*. Leone to the Congo. — **alinda** Mab. (49 e) is larger than the type-form and has the black marginal band *angulata*. on the upperside of the hindwing 7—8 mm. in breadth. Ivory Coast and Cameroons. — **angulata** Auriv. (49 e as *dryope*). Distal margin of the forewing distinctly angled at vein 6; the brown spots on the under surface are smaller and more or less completely united into transverse bands or lines; in cellule 1 b of the forewing are placed three dark transverse streaks, at uniform distances apart or the second somewhat nearer to the first than to the third; the transverse band on the upper surface is ochre-yellow and does not reach the distal margin; the brown transverse lines on the underside rather broad and uneven. The early stages agree so exactly with those of *hiarbas angustata* that according to Miss FOUNTAINE they cannot be distinguished. After the remarkable discoveries with regard to other African species that have been made in recent years, it would not be surprising if *hiarbas* proved to be a form of *dryope*; so far, however, the one species has never *lineata*. been bred from the eggs of the other. — **lineata** Auriv. nearly approaches the preceding form, only differing *narinda*. in the narrow and little broken transverse lines on the light under surface. Madagascar. — **narinda** Ward is likewise similar to the two preceding forms, but has the under surface very dark red-brown and on the upper a reddish yellow transverse band, which reaches the distal margin and is there only interrupted by the black submarginal line; the distal margin of the forewing projects obtusely at vein 6, but is scarcely angled. Madagascar.

#### 7. Subfamily: Vanessinae.

The following characters are common to all the genera of this subfamily: the precostal vein of the hindwing arises from vein 8 after its separation from the cell, none of the veins are inflated at the base, the stalk of veins 7 and 8 on the forewing is always longer than the veins themselves and the palpi are not swollen. The wings are usually more or less angled.

The larvae have on the body several rows of stiff, branching spines and the pupae are angled and have two points on the head.

Here belong several genera with numerous species, many of which are among the commonest and best known butterflies of the Ethiopian Region.

#### Synopsis of the Genera.

##### I. Eyes naked.

A. Distal margin of the forewing at veins 5 and 6 not projecting, straight or even emarginate; apex on the other hand at vein 9 sharply projecting, rectangular or acute-angled. Veins 10 and 11 on the forewing both free from the cell. 1. *Kallima*.

B. Distal margin of the forewing at vein 6 (or 5) more or less angled; the true apex (at the end of vein 9) on the other hand usually retracted and rounded, rarely pointed.

a) Vein 11 and usually also vein 10 of the forewing arise free from the anterior margin of the cell before its apex.

\*. Veins 5 and 6 of the forewing almost from the same point; vein 10 from the stalk of veins 7—9; cells open. 2. *Apaturopsis*.

\*\*. Veins 5 and 6 of the forewing distinctly separated at their origin by a curved middle discocellular.

a) Cell of the forewing distinctly closed.

1. Palpus black with sharply prominent white markings.

3. *Hypolimnas*.

2. Palpus unicolorous without spots.

4. *Salamis*.

b) Cells of both wings open (or extremely finely closed).

1. Distal margin of the forewing projecting furthest at vein 5. Club of the antenna weakly and gradually thickened, irregularly rounded. 5. *Catacroptera*.

2. Distal margin of the forewing projecting furthest at vein 6. Club of the antenna distinctly defined, more or less flattened. 6. *Precis*.

b) Veins 10 and 11 of the forewing both arise beyond the apex of the cell from the stalk of veins 7—9. Cells closed. 7. *Vanessula*.

##### II. Eyes densely hairy.

A. Hindwing with the distal margin uniformly curved, not angled.

8. *Pyrameis*.

B. Hindwing angled or tailed at the extremities of veins 1 c, 2 and 4.

9. *Antanartia*.

1. Genus: **Kallima** Westw.

Forewing broadly triangular with straight hindmargin, strongly curved costal margin, acute apex and straight or slightly emarginate distal margin, posteriorly somewhat ventricose at veins 2 and 3. Hindwing lobed or tailed at the anal angle; on both surfaces or at least beneath with eye-spots in cellules 2 and 5 and occasionally also in 3 and 4.

Larva *Vanessa*-like with two long spines on the head and 6 sharp spines on each segment from 2—11. Pupa angular with two points on the head, a long pyramidal hump on the mesothorax and two conical protuberances dorsally on each of the middle abdominal segments.

The African species are smaller and less leaf-like than the well-known species from South Asia. The genus does not occur on Madagascar.

## First Group.

Hindwing broad and rounded with the distal margin more or less undulate. The dark median line on the underside of the hindwing, which extends from the anal angle to the costal margin, is only continued on the forewing as far as vein 2 or is there directed towards the middle of the costal margin.

**K. rumia** *Dbl. & Westw.* (49 f). Wings in the ♂ dark brown above; forewing with broad violet-*rumia*. blue median band and narrow red subapical band; hindwing almost unicolorous with indistinct grey submarginal line and 2—4 eye-spots; ♀ larger, the forewing with a white median band, extending from the middle of the costal margin to vein 3 and accompanied by a triangular white spot in cellule 2 and 3 or 4 rounded white submarginal spots; the subapical band is absent; the upperside of the hindwing behind the middle with a very broad yellow-grey or yellowish white transverse band, not sharply defined. The under surface in both sexes brown-yellow with dark transverse lines and light markings, as shown in the figure. The hindwing only shortly lobed at the anal angle. Larva reddish grey with broad black discal line and oblique dark lateral streaks; head dark brown armed with two long spines; body with rather dense whitish hairs and light spines; the first segment is unarmed, segments 2—11 each have 6 and segments 12 and 13 2 spines. Pupa green, watered with reddish. Ivory Coast to the Congo. — ♀-ab. **amiru** *Suff.* only differs in *amiru*. having the transverse band of the forewing partly cream-yellow instead of white. Togo. — **ratrayi** *E. Sharpe* *ratrayi*. (= *kassaiensis Niepelt*) is an easterly race which only differs in the ♂ from the type-form in the indistinct subapical band of the forewing and the eye-spots on the upperside of the hindwing, but in the ♀ is distinguished by having the hindwing above unicolorous without light transverse band, while the forewing bears a larger white subapical spot; its transverse band is yellowish, as in *amiru*. Kassai River and Uganda.

**K. jacksoni** *E. Sharpe* (50 a) is a rare and very beautiful species, which differs from *rumia* in the *jacksoni*. very sharp, somewhat falcate apex of the forewing and in having the distal margin of the hindwing slightly angled at vein 5; the anal angle forms an obtusely rounded tail of nearly 5 mm. in length; both wings above bright light greenish blue to far beyond the middle, with 3 white discal dots and 3 submarginal dots in cellules 2—4 and a small white subapical spot on the forewing and 3 black dots on the hindwing in cellules 4—6 at the distal edge of the blue colour; the brown distal part of the hindwing is about twice as broad as the marginal band of the forewing and less sharply defined. The under surface is dark grey-brown with dark median line, which on the forewing runs from the middle of the hindmargin to the middle of the costal margin and is quite straight; the forewing with a distinct eye-spot in cellule 2 and some dark transverse lines in the cell. North-eastern Congo region and Kavirondo.

## Second Group.

The hindwing elongated from costal margin posteriorly, distal margin entire. The dark transverse line on the underside of the hindwing is continued distinctly on the forewing as far as vein 5 and is directed towards the apex. The tail of the hindwing long, straight or somewhat curved or pointed.

**K. cymodoce** *Cr.* (49 f). Both wings black-brown above, at the distal margin somewhat lighter *cymodoce*. brown and in the basal part with strong blue-violet reflection at least as far as vein 3; before the distal margin a black submarginal line and before the apex of the forewing at the base of cellule 7 a whitish dot; the forewing with gently curved orange-yellow subapical band, 3—4 mm. in breadth, extending from the costal margin to vein 3 or 2, or even reaching vein 1, but becoming indistinct posteriorly; a distinct eye-spot in cellule 2 of the hindwing and occasionally also in cellule 2 of the forewing; the under surface is very dark tawny and sprinkled with yellowish scales. According to ARNOLD SCHULTZE the species is very shy and when it has once settled in the dense underwood is not to be found again; it does not even fly up when the bushes are beaten. Niger to Angola. — **lugens** *A. Schultze* only differs in having the subapical band on *lugens*. the upperside of the forewing very narrow, indistinct and olive-grey. South Cameroons.

**K. ansorgei** *Rothsch.* (= *incerta Grünb.*) is probably the eastern form of *cymodoce*; it only differs in the *ansorgei*. entire absence of the subapical band of the forewing and in having the upperside of both wings bright greenish



blue to beyond the cell; the blue colour is sharply defined distally and is distinct at every angle of light. Uganda and the interior of the Cameroons near Babungo, 1500 m. (A. SCHULTZE).

## 2. Genus: **Apatuopsis** *Auriv.*

The forewing is triangular with the costal margin moderately curved and the distal margin angled at vein 6 and deeply incurved behind it. In the ♂ the hindwing is distinctly produced at the anal angle. The cells are open and vein 10 of the forewing arises behind the apex of the cell; the precostal vein of the hindwing is distally curved. The genus agrees in the shape of the wings with *Thaleropsis* *Stgr.* and in neuration with *Dilipa* *Moore*, but differs from both in the naked eyes.

It is possible that *Apatuopsis* does not belong to the *Vanessinae* but to the *Apaturinae*. This, however, can only be settled by the discovery of the early stages.

Both the species are little known and still very rare in collections.

*cleocharis.* **A. cleocharis** *Hew.* (50 c). The hindwing and the basal half of the forewing brown-yellow above; the former with black apical spot, black line just before the distal margin and small black submarginal spots in cellules 2—5, the latter divided by a dentate black transverse line into a proximal brownish and a distal yellowish part; the apical half of the forewing black with two small white subapical dots and yellow discal spots in 1 b, 3, 4, 5 and 6; under surface yellow-brown and yellow-grey with brownish spots and striae. The ♀ is larger and has the hindwing completely rounded at the anal angle. Gazaland, Angola, Congo and Uganda.

*kilusa.* **A. kilusa** *Smith* (50 e) is similar to the preceding species, but lacks the white subapical dots on the forewing and the dark marginal line on the hindwing; the underside of the forewing is also much darker than in *cleocharis*. North-West Madagascar.

## 3. Genus: **Hypolimnas** *Hbn.*

Palpus elongate, with appressed scales, black with white spots. Antenna of moderate length, not extending beyond the middle of the costal margin on the forewing; its club distinctly defined, oval, little flattened. Wings large and broad; the forewing at the extremity of vein 6 more or less angled or outcurved and behind this emarginate; hindwing rounded, or a little produced at the anal angle, the distal margin undulate, dentate, or occasionally almost entire.

Larva with two long spines on the vertex of the head, two short spines at each side on the first segment and 8—10 in a transverse row on segments 2—11. — Pupa with two short blunt points on the head, the thorax moderately raised, abdomen with short conical spines.

The species are medium-sized to large and are widely distributed in the tropics of the Old World. In the Ethiopian Region they are represented both on the continent and on the islands.

The females of some species are entirely different in markings and colouring from the males and mimic the Danaids. Another species, *H. dubia*, is noteworthy on account of the extraordinary number of forms in which it occurs, as has only recently been discovered.

The Ethiopian species may be divided into 4 groups.

### Synopsis of the Groups.

- I. Cell of the hindwing distinctly closed. Palpus beneath with broad, continuous white longitudinal stripe, reaching at least to the end of the second joint. *Misippus* Group.
- II. Cell of the hindwing open or extremely finely closed. Hindwing beneath without black transverse streak in cellule 7. Palpus beneath only with separated white spots, one at the base of the first, the other at that of the second joint.
  - a) Cell of the forewing unicolorous black or at most with a bluish stripe. Forewing without broad white subapical band, but often with free, rounded submarginal spots. *Salmacis* Group.
  - b) Cell of the forewing with a white spot or, when this spot is absent, the forewing with broad white subapical band.
    1. Forewing without white subapical band and without white hindmarginal spot, but in the middle with white spots at the base of cellules 2, 3 (and 4). *Dinarcha* Group.
    2. Forewing behind the middle with a white or bluish subapical band composed of spots in cellules 4—6, placed almost vertically to the costal margin, and in addition with white median band or white hindmarginal spot. *Dubia* Group.

## Misippus Group.

The ♂♂ are blackish above with a large white spot in the middle of the hindwing and two white spots on the forewing, one in the middle composed of 3—5 spots in cellules (2) 3—5 (6) and one before the apex consisting of 2 or 3 spots in cellules 6—8; these white markings are surrounded by a blue or violet iridescence. The ♀♀ are usually very unlike the ♂♂ and develop a large number of races and forms.

**H. bolina** L. (vol. IX, p. 547, pl. 118 b) belongs properly to the Indo-Australian Region, in which it shows *bolina*. an extraordinary range of variation. In the Ethiopian Region it has hitherto only become naturalized on the islands of Socotra, Lemka (near Socotra) and Mauritius. On the last-named island only a few specimens have been met with, which perhaps were only accidentally introduced. The ♂ of *bolina* differs from that of *misippus* in the smaller white markings of the upper surface and especially in the white median band on the hindwing beneath, which is not half as broad, only 4—5 mm. The Socotra form closely approximates to the South Indian and Ceylon race and has a female form which agrees with *jacintha* Don. (vol. IX, pl. 119 b).

**H. misippus** L. (vol. I, pl. 60 c). In the male the white markings on the upper surface are larger *misippus*. and more rounded than in *bolina* and the hindwing has on the underside a white median band about 10 mm. in breadth, extending from the inner margin to vein 8 and containing one or two black transverse streaks in cellule 7. The ♀ is always quite unlike the ♂ and mimics the forms of *Danaida chrysippus* and *dorippus*. The typical ♀ resembles the typical *D. chrysippus*, having the apical half of the forewing black with white transverse band and white subapical spot; the basal half of the forewing and the hindwing are brown-yellow above; the latter has a white-dotted marginal band 4 mm. in breadth; beneath the apex of the forewing and the hindwing are ochre-yellowish and the hindwing has a black spot at the base of cellule 5 and a black transverse streak in 7; the white spots of the marginal band are larger than above; the basal part of the forewing beneath is dark brown and is separated by a black transverse band from the white spots in cellules 3—6. ♀-ab. **alcippoides** Btlr. (47 a) only differs in having the hindwing more or less extended white in the middle *alcippoides*. on both surfaces; it thus corresponds to the form *alcippus* of *Danaida chrysippus*. In ♀-ab. **inaria** Cr. (vol. I, *inaria*. pl. 60 c) the forewing is yellow-brown above except for the black costal margin and the marginal band, which is only 2—3 mm. in breadth, almost exactly as in *Danaida dorippus*. ♀-ab. **dorippoides** Auriv. has the *dorippoides*. middle of the hindwing more or less white, but otherwise agrees with *inaria*, thus corresponding to the form *albinus* of *Danaida dorippus*. *H. misippus* occurs commonly throughout the Ethiopian Region. — The larva is dark brown, laterally dark greenish with two reddish streaks; legs red; the spines are blackish. Lives on species of *Portulaca*. Pupa brownish, with black-brown markings; abdomen with fine dark transverse lines; wing-cases dark brown with some ochre-yellow spots.

## Salmacis Group.

Mostly large species with very broad wings. Distal margin of the hindwing in the first species deeply dentate, in the others only undulate. In all the species except the last the veins of the hindwing and sometimes also veins 1—5 on the forewing are accompanied on each side by a bluish or white dot or streak at or somewhat before their extremity. The forewing behind the cell with a white or whitish transverse band composed of 3—6 spots.

**H. dexithea** Hew. (47 a). Both wings black-brown above; the forewing with a broad white median band *dexithea*. extending from the middle of the costal margin to the middle of cellule 2, white submarginal spots in 1 b, 2, 5—8, a bluish longitudinal streak in the cell and a bluish spot at the base of cellule 2; the hindwing with large white median area, bounded in cellules 1 a—5 by a broad brown-red band; marginal streaks of both wings long and bluish. Beneath both wings are red-brown with the light markings somewhat enlarged; only the marginal bands, about 3—4 mm. in breadth, and the hindmargin of the forewing nearly to vein 3 are black and the marginal streaks are white instead of blue. This magnificent species, which differs from all others in its deeply dentate hindwing, occurs only on Madagascar and flies in the forests of the northern and eastern parts of the island.

**H. antevorta** Dist. (47 a) is also black above with blue median band on the hindwing, blue discal *antevorta*. spots in 1 a, 1 b, 2 and the cell of the forewing and blue marginal streaks, which, however, do not quite reach the distal margin; the white transverse band of the forewing is narrower than in *dexithea*, is more obliquely placed and terminates in cellule 4; the white submarginal spots of the forewing are large and all present. Beneath both wings are dark umber-brown, only black at the hindmargin of the forewing, the median band of the hindwing is white and only 2 mm. in breadth; the marginal streaks are also white, but larger than above; the forewing projects more sharply at vein 6 than in the other species. Hitherto only found in German East Africa.

**H. salmacis** is distinguished by having the upperside of the hindwing extended blue or violet in the middle; the blue colour forms two long points distally in each cellule and is more or less interrupted in the middle by a white band; another large blue area is placed at the hinder angle of the forewing, covering the distal half of cellules 1 a and 1 b and a larger or smaller part of cellule 2 and anteriorly touching the white



median band; in the ♀ the blue colour is often replaced by white-grey or yellow-grey. On the under surface both wings are dark brown with white median band and marginal spots, but without blue markings; the cell *salmacis*. has two blackish longitudinal lines, united towards the base. — *salmacis* Drury (47 b). The forewing with white submarginal spots in cellules 1 b—7 or at least in 1 b, 2, 6 and 7; the white band narrow and margined with blue; the hindwing on both surfaces with white median band. Sierra Leone to the Congo and Uganda. *cissalma*. — ab. *cissalma* Suff. only differs in the ♂ in having all the markings on the upper surface blue with the exception of subapical spots 6 and 7 on the forewing and the spots on the fringes, in the ♀ in having the *platydema*. markings on the upper surface cream-yellow instead of blue. Lake Tchad and the Cameroons. — *platydema* Rothsch. & Jord. has the white transverse band of both wings broader and more sharply defined than in the *thomensis*. type-form. Unyoro and Abyssinia. — *thomensis* Auriv. is distinguished by having the blue colour on the forewing less extended and the white transverse band much broader, nearly as broad as in *monteironis*, but especially by the white transverse band of the hindwing being entirely absent above and beneath only represented by a fine transverse line, running almost as in *antevorta*, but finer. Island of Sao Thomé. — *monteironis*. *monteironis* Druce (47 b) differs from all the other forms in having the apex of the forewing as far as the white transverse band unicolorous black without spot; the white transverse band is broader than in the type-form, more sharply defined and almost entirely separated from the blue spot. Old Calabar to Angola and Uganda. *chapmani*. *H. chapmani* Hew. is a rare and little known species, of uncertain affinities; in the unspotted cell it agrees with the *salmacis* group and the two dark lines in the cell of the hindwing beneath accord also with *salmacis*. Both wings dark brown, in the basal part of the hindwing lighter, yellowish brown, and beneath at the base red-brown; the veins are blackish and the hindwing has on both surfaces thick black-brown streaks on the interneural folds. In the type-form the forewing has only two whitish discal spots in cellules 2 and 3. *fasciata*. Old Calabar. — ab. *fasciata* Auriv. (47 d, as *chapmani*) has on the forewing a white transverse band of 3 or 4 spots in cellules 2—5. Cameroons. — The species has a *Planema*- or *Pseudacraea*-like aspect and should perhaps be regarded as a mimetic form.

### Dinarcha Group.

The forewing has 2—4 white spots in the middle, but no white subapical band and no hindmarginal spot, otherwise the species nearly agree with those of the following group. The submarginal spots in cellules 5 and 7 of the forewing, however, are always smaller than the one in cellule 6 or are entirely absent. The hindwing on both surfaces with distinct black rays between the veins.

*mechowi*. *H. mechowi* Dew. (47 d). The forewing has in the middle a large white area, composed of a spot in the cell and a long spot in each cellule from (1 b) 2—4; the spot in cellule 2 reaches the cell and almost entirely covers the base of cellule 2; in addition the forewing has submarginal spots in 1 b, 6 and 7, of which the one in 6 is large; both wings have white marginal dots and the hindwing is broadly white in the middle. Beneath the forewing is black at the base and in the hindmarginal part and the hindwing broadly yellow-red at the base of the costal margin. Congo.

*dinarcha*. *H. dinarcha* differs from *mechowi* in having the white or bluish discal spots on the forewing smaller and the one in cellule 2 far removed from the base; the hindwing is less produced at the anal angle and its under surface is not reddish at the base. — *dinarcha* Hew. (47 c). The submarginal spots of the forewing are all or nearly all present and those in cellules 1 b, 4 and 6 always large (♂) or very large (♀); the hindwing near the base with an oval white or whitish median area, which reaches at least to the apex of the cell; in the ♀ the discal band of the forewing is larger, more continuous and composed of 4 spots. Sierra Leone to the Congo and Uganda. — ab. *narchadi* Suff. only differs in having the hindwing above dark umber-brown, at the base and the costal and distal margins blackish, without white median area. Gold Coast and Cameroons. — *bartteloti*. *bartteloti* Smith has the wings somewhat shorter and broader and the distal margin of the forewing more obtusely rounded between veins 5 and 7; in the markings it only differs from the type-form in having submarginal spots 2—5 on the forewing all very small or absent. Hitherto only met with in the extensive forest lands in the interior of the Congo region.

### Dubia Group.

The forewing with both white subapical spots in or before the middle of cellules 4—6 and light discal spots in (1 b) 2 (3) and the cell, or instead of the discal spots a large white hindmarginal spot covering the middle of cellules 1 a—2. The white submarginal spots of the forewing are entirely absent or are small the first, in cellule 7, is, however, always larger than those in cellules 3—6. Through the highly interesting discoveries of MILLAR (see p. 215) the number of species in this group has been materially reduced.

*deceptor*. *H. deceptor* Trim. (47 c) may be known especially by the shorter and broader wings and the peculiar pattern on the underside of the hindwing, which is more or less white at the base of the costal margin in cellule 8, but without white, black-ringed basal dots, as in the forms of *dubia*; cellule 7 is for the most part



dark brown beyond the middle and the large white median area reaches the inner margin and sends off a branch towards the apex and another towards the middle of the distal margin in cellule 4; then follows a broad dark brown band and at the distal margin a narrow whitish band divided by two black lines; the forewing has a white dot in the basal part of the cell, a continuous discal band and subapical band and usually only two submarginal dots, one in 1 b and one in 7; beneath the forewing is blackish as far as vein 4, then lighter brown, irrorated in places with white, at the middle of the distal margin relieved with whitish; hindwing above with large white discal area, extending beyond the middle and distally rounded; the light markings are smaller in the ♂ (= kirbyi *Btlr.*) than in the ♀. Larva velvety black with a yellow belt in the middle of each segment, in which the spines are placed; the spines on the head are long, black and thickened into knobs at the tip; it lives in Natal on a species of the genus *Fleurya*. Natal to British East Africa. — *deludens* *Smith* (= *grandidieri* ♂ *deludens*. *Mab.*) is the race from Madagascar and only differs in both wings having a complete row of white submarginal dots.

*H. limbata* *Crowley* is distinguished by having the white marginal spots of both wings on both surfaces united into a marginal band 1 mm. in breadth, only interrupted by the dark veins. The wings are light black-grey on both surfaces with almost the same white markings as in *drucei* *Btlr.* except that submarginal spots 6—8 on the upperside of the forewing are larger and joined together. Smaller than *dubia*, with an expanse of about 60 mm.; probably only a form of *dubia*. Comes from Madagascar and must be very rare.

*H. dubia* is very rich in forms and is a very interesting species biologically. For a long time three local races were known, a West African (*dubia* with the aberrations *cerberus* and *damoclina*), a South and East African (*mima*) and one from Madagascar (*drucei* with the aberration *beursheri*). At the same time another species, *anthedon*, was known, which entirely agreed with *dubia* in structure and wing-shape, but had a quite different pattern, the light discal band of the forewing being absent and replaced by a large hindmarginal spot in cellules 1 a—2, and the white submarginal dots wanting on both wings. *anthedon* also had three local races, a West African (*anthedon*, type-form), a South and East African (*wahlbergi*) and a Madagascar (*madagascariensis*). It is true some few specimens were known (*diffusa*, *daemona*, *daemonides*) which might be regarded as transitional forms between *dubia* and *anthedon*. But as hybrids can occur in nature, although very rarely, these specimens were regarded as such. In addition specimens of *mima* and *wahlbergi* were taken in copula. But even this fact was not sufficient to unite the two "species". Not until the experiments carried out by ALFRED D. MILLAR in 1909 in Natal was the matter decisively cleared up. MILLAR obtained from eggs laid by a ♀ of *H. wahlbergi* 4 *wahlbergi* and 5 *mima*, and from the eggs of a *mima* ♀ once only specimens of *mima* and another time 8 *mima* and 3 *wahlbergi*. Thus it is proved that in *dubia* we have to do not only with three local races, but also in each race with two forms quite different in the markings and including both sexes. It should further be mentioned that the forms without hindmarginal spot on the forewing mimic the *Amauris* species *hyalites* (24 a), *egialia* (25 c), *inferna* (24 b), *hecate* (24 b) and *albimaculata* (25 d, as *lobengula*), while on the other hand the forms with hindmarginal spot on the forewing are similar to the forms of *Amauris* *niavius* (23 d) and *nossima* (23 d). All the forms of *dubia* are on the underside deep black close to the base of the hindwing with two white dots, one in the cell and one in cellule 8. The larva differs from that of *H. deceptor* in the yellowish spines.

#### a. The West African Race.

*dubia* *Pal.* (48 a). Forewing with submarginal dots, but without hindmarginal spot; the light basal part of the hindwing is large, covering also the base of cellules 1 c, 2 and 3 and extending in cellules 4—6 far beyond the middle. ab. *damoclina* *Trim.* (47 b, c) only differs in having the light (white to yellowish) basal area of the hindwing much smaller, not extending beyond the middle, and posteriorly and proximally bounded by the lower median vein; the discal spots on the upperside of the forewing are often bluish in the ♀; in the reduction of the median area of the hindwing it forms a transition to ab. *cerberus* *Auriv.*, in which the light area of the hindwing is entirely absent; cf. *Amauris tartarea* (25 a). — f. *daemona* *Stgr.* forms a transition between *dubia* and *anthedon* and is distinguished by having the discal spot in cellule 2 of the forewing, which is of the same shape as in *dubia*, joined to the hindmarginal spot by three long whitish spots in cellules 1 a and 1 b, whilst the submarginal band is continuous; the white submarginal dots are present, but smaller than in *dubia*; the light area of the hindwing as large as in the latter. Cameroons. — ab. *daemonides* *Stgr.* (= *latepicta* *Bartel*) is also a transitional form and only differs from *daemona* in having the hindmarginal spot of the forewing yellowish in cellules 1 a and 1 b and the subapical band of the forewing dusted with blackish; the light area of the hindwing is smaller than in *daemona*. — Kuilu. — f. *anthedon* *Dbl.* (47 c) is the form without submarginal dots and with large white hindmarginal spot on the forewing; the light basal area of the hindwing is moderately large and the black marginal band consequently 6—15 mm. in breadth at vein 2 and



5—9 mm. at vein 6. — The West African race is distributed from Sierra Leone to Angola and Uganda and passes gradually into the following race in the border regions.

#### b. South and East African Race

*mima*. **mima** Trim. (48 a) corresponds to *dubia*, but has in the cell of the forewing a narrow streak-like white spot, which does not reach the lower angle of the cell; the light area of the hindwing is large, covering as in *dubia* also the base of cellules 1 c—3, and is distally rounded. f. **millari** form. nov. is a transitional form to *wahlbergi*, already figured by TRIMEN in 1910; it corresponds to *daemona* Stgr., only differing from it in the larger and more sharply defined hindmarginal spot of the forewing and the better defined basal area of the hindwing. f. **wahlbergi** Wallengr. (47 d) only differs from *anthedon* in the enlargement of the white markings; the dark marginal band of the hindwing is consequently only 4—6 mm. in breadth. This race occurs in Natal and the whole of East Africa as far as Uganda.

#### c. Madagascar Race

*drucei*. **drucei** Btlr. corresponds to the forms *dubia* and *mima*, but differs from them in having the submarginal dots of the hindwing larger and present in all the cellules, including 1 c and 2; the light area of the hindwing is large and yellowish. ab. **bewsheri** Btlr. has the basal area of the hindwing white or whitish, but otherwise agrees with *drucei*. f. **diffusa** Btlr. is, like *daemona* and *millari*, a transitional form and like them has a large hindmarginal spot on the hindwing and distinct submarginal dots, which, however, are present also in 1 c and 2 on the hindwing; the light basal part of the hindwing is very large and white. f. **madagascariensis** Mab. nearly approaches the form *wahlbergi*, but has still more extended white markings and a thick, not streak-like, white spot in the cell of the forewing.

*usambara*. **H. usambara** Ward is similar to the form *wahlbergi* of *dubia*, but larger, and distinguished by having on the hindwing above brown-red spots before the distal margin in 1 b and 2 and beneath a broad lunulate band of the same colour before the narrow black distal margin; also the underside of the forewing before the apex brown-red. As other species also, as for instance *Pseudacraea lucretia* and *Neptidopsis ophione*, have East African races in which yellow-red markings are present at the hindmargin of the hindwing, it would not surprise me if this rare form proved to be likewise a race of *dubia*. German and British East Africa.

### 4. Genus: **Salamis** Bdv.

This genus almost entirely agrees with *Hypolimnas* in neurulation and embraces large, broad-winged, finely coloured species which are peculiar to the Ethiopian Region and are most closely allied to the Indian genus *Rhinopalpa*. The forewing is always angled or long-produced at the extremity of vein 6 and the hindwing lobed or tailed at the anal angle.

The early stages agree with those of *Hypolimnas* and the larva has two long spines on the head, two at each side of the first segment, 10 each on segments 2 and 3 and 11 each on segments 4—10. The pupae are very similar to those of our large *Vanessa* species.

The species may be divided into three very natural groups.

#### First Group.

The distal margin of the hindwing at the extremity of vein 5 angled or with a short tail. Both wings above and beneath with submarginal eye-spots; eye-spots 1 b and 2 on the forewing equidistant from the distal margin.

*temora*. **S. temora** Fldr. (50 c). Both wings above as far as the eye-spots or on the forewing nearly to the distal margin a beautiful dark blue in the ♂ or violet-brown in the ♀, then brown-grey with 1—5 eye-spots and two black-brown marginal lines; under surface with violet-grey and black-brown transverse bands or lines and with a whitish spot at the costal margin of the hindwing. Old Calabar to Angola, German East Africa and Abyssinia. ab. **virescens** Suff. differs in the blue-green to almost green colour of the upper surface, which extends on the hindwing as far as the first marginal line, hence enclosing the eye-spots. German East Africa: Mhonda.

*cytora*. **S. cytora** Dbl. & Hew. (50 c) nearly approaches the preceding species, only differing in the upperside of both wings having a broad light blue (♂) or whitish (♀) median band, which extends on the forewing from the middle of the costal margin to the hindmargin near the anal angle, where it encloses the eye-spots in cellules 1 b and 2; on the hindwing it reaches vein 1 b and is nearly straight. Sierra Leone to Togo.

#### Second Group.

The distal margin of the hindwing at the extremity of vein 4 with a more or less long tail; distal margin of the forewing long-produced at vein 6. Wings above white or whitish, with a strong mother-of-pearl gloss; apex of the forewing for a smaller or greater extent black and also two lines, sometimes indistinct or broken up into spots, before the distal margin and the eye-spots. The eye-spot in cellule 1 b of the forewing placed much nearer to the distal margin than the one in 2.



**S. parhassus** is on an average larger than the following species and may be at once distinguished from it by the strongly glossy under surface of both wings; the eye-spot in cellule 2 of the forewing is distinct also beneath. — **parhassus** *Drury* is the northern race and is distinguished by having the distal margin of both wings above more broadly darkened and at the apex of the forewing completely united with the eye-spots in cellules 5 and 6. Sierra Leone to the Niger. — **aethiops** *Pal.* (50 b). The dark marginal band on the upper surface is absent or narrow and the eye-spot in cellule 5 of the forewing is usually quite free. — Larva black with a broad red-brown transverse band dorsally on each segment between the belts of spines or unicolorous red-brown with black spines and black head. Old Calabar to the Cape and Abyssinia.

**S. anacardii**. The wings beneath with dull white ground-colour, not glossy; the eye-spot in cellule 2 on the underside of the forewing absent or quite indistinct; the apex of the forewing above broadly black, the black colour sharply defined basally and enclosing some white spots. — **anacardii** *L.* The black apical part of the forewing above is narrower and does not completely enclose a white spot in cellule 4. Sierra Leone to Gold Coast. — **ansorgei** *Rothsch.* nearly approaches the type-form but has a more reddish reflection on the upper surface; the black submarginal spots in cellules 4—6 are placed in a straight line and the spot in cellule 2 is larger than that in cellule 1 b. Angola. — **nebulosa** *Trim.* (50 b ♀; ♂ as *anacardii*) has the black markings of the upper surface more extended, especially in the ♀; the black apical part of the forewing above always completely encloses a small black dot in cellule 4. Natal to Unyoro and Abyssinia. — **duprei** *Vins.* (50 b) only occurs on Madagascar and differs from the other races in the hindwing having a long tail at the anal angle and in the distal margin of the forewing in the ♂ projecting very strongly at vein 6.

### Third Group.

Distal margin of the hindwing uniformly rounded or at vein 4 angled or with a short tail. Wings above with the ground-colour red-brown, violet-brown or dark brown and the apical part of the forewing black; the black colour reaches the middle of the costal margin and the anal angle. The hindwing above with two dark marginal lines but without eye-spots, instead of these occasionally with submarginal dots. The under surface is extremely variable, scarcely two specimens being coloured alike; it is more or less leaf-like or simulates the colouring of a branch or tree-trunk covered with lichen or moss. A straight dark line runs from the anal angle of the hindwing nearly to the apex of the forewing. The tail at the anal angle of the hindwing is always curved somewhat inwards.

**S. augustina** *Bdv.* Both wings above dark violet-brown; the forewing with black marginal band which always encloses a large white submarginal spot in cellule 5 and usually also white spots in cellules 2—4; the hindwing with light grey to yellowish marginal band, about 13 mm. in breadth in the middle; the transverse line on the under surface is more or less edged with white or bordered with white spots. Madagascar, Bourbon, and formerly also on Mauritius, where, however, it seems to be now extinct. Colonel N. MANDERS, who in 1907 published a work on the butterflies of Mauritius and Bourbon, writes concerning it: "This butterfly is one of exceptional interest, as it is almost certainly extinct (on Mauritius), no specimen having been taken for twelve years. So far as I can ascertain from extensive inquiries in this country and abroad, there are only two specimens extant; one in Mr. TRIMEN's collection given to him in the year 1865 by the late Mr. COLVILLE BARCLAY taken in the Moka district and the other, here figured, in the Port Louis Museum. It is well therefore to put on record all that I have learnt regarding the latest captures of this rare insect. It was getting very scarce when Mr. TRIMEN was in the island in 1865, and it is strange that an insect whose larva feeds on the sugar-cane which covers the greater portion of Mauritius should not rather be overabundant than otherwise. I attribute its disappearance to the depredations of the Indian Mynah (*Acridotheres tristis*), which was introduced some hundred years ago for the purpose of keeping in check the field-cricket and other insects which were destroying the canes. The bird is protected and is consequently over-abundant, flying in small flocks of twenty to thirty all over the country, and making themselves a general nuisance. The bird was also brought into Bourbon, but fortunately for *S. augustina* so frequently finds its way into the cooking-pots of the natives, that the butterfly survives though in greatly diminished numbers. In Madagascar where the "Mynah" is unknown, *S. augustina* is not uncommon. Man therefore is responsible for the extinction of the butterfly. The Port Louis specimen came from the collection of the late M. REYNARD, who some five-and-twenty years ago bred some half dozen specimens from larvae found in his garden on Trianon estate in the Moka district. At his death they came into the possession of the Port Louis Museum authorities, but only the one specimen could be preserved, the remainder being in fragments. In August 1895 Dr. BOLTON captured two specimens at Souillac on the east coast. These specimens were afterwards lost. This is the last capture I have been able to ascertain". The extinction of *S. augustina* on Mauritius is so much the more to be regretted because it had apparently produced a separate race there, which was distinguished by having the white submarginal spots on the upperside of the forewing better developed.

**S. anteva** *Ward* (50 a). Distal margin of the hindwing rounded or at vein 4 very weakly angled; both wings above with the ground-colour yellow-brown, much darker on the hindwing, with faint violet reflection; the black apical part of the forewing near its proximal margin in cellules 3—6 with a light subapical band, which is blue in the ♂ and white in the ♀; the under surface is lighter or darker tan-yellow to violet-grey with darker transverse bands and lines. Madagascar.



*amaniensis.*

**S. amaniensis** *Vosseler* is unknown to me and is described as follows: "Ground-colour of the upper surface dark red-brown with strong red-violet reflection, which also overspreads the marginal markings of the wings; apical part and distal margin of the forewing occupied by a broad blue-black band, the proximal boundary of which extends in a curve from the middle of the costal margin to the hindmargin, terminating 2.5 mm. before the anal angle; near the apex there is a round spot in cellule 5, a second, smaller one at the beginning of cellule 7, both blue-white; middle part of the distal margin narrowly edged with blue-white, with white marginal striae on the interneural folds, which are continued anteriorly; costal margin yellow-brown to the middle; hindwing darkening towards the distal margin, especially on the anterior half, which besides two blackish undulate lines accompanying the entire distal margin shows 4 blurred dark dots; apex delicately bordered with white; anal angle produced into a lobe with a few scattered blue-white scales; ground-colour of the under surface chocolate-brown somewhat tinged with violet, with blackish, brown and grey-white markings; a straight line runs from the costal margin of the forewing near the apex to the anal angle of the hindwing; at its proximal side there are three small white spots in cellules 6 and 7 of the hindwing, the first two touching one another". From the description this species seems to me to be decidedly nearer to the following than to the preceding. German East Africa: near Amani.

*cacta.*

**S. cacta** *F.* (50 e) differs from the preceding species of this group in having the distal margin of the hindwing at vein 4 short-tailed (♂) or at least distinctly angled (♀). Both wings dark red-brown above, with violet reflection; the forewing at the proximal side of the black apical part with a broad orange-yellow band, extending from the costal margin at least to vein 2; the forewing usually with two white or bluish dots before the apex, one in cellule 5, the other in 7 and 8; the under surface both in the ground-colour and the markings extremely variable — brown-grey, dark brown, greyish or yellowish. Sierra Leone to the Congo and Abyssinia.

*languida.*

— ab. **languida** *Bartel* is founded on a ♀ in which the violet reflection of the upper surface is entirely absent. Ruwenzori.

### 5. Genus: **Catacroptera** *Karsch.*

The sole species of this genus was formerly referred to *Precis* and really differs but little from this. The differences have been cited in the synopsis. The hindwing is distinctly tailed at the anal angle.

The larva differs in having two long spines on the head, thickened at the end; the pupa is ventricose in the middle and lacks the protuberances and spines of the *Precis* pupae.

*cloanthæ.*

**C. cloanthæ** forms two local races, each having a rainy- and a dry-season form; the wings are orange-yellow above, with black base, two black transverse streaks in the cell of the forewing and one behind its apex, postdiscal eye-spots often pupilled with blue, and two dark marginal lines, often broken up into spots or in part indistinct; a black spot at the end of the cell of the hindwing. — **cloanthæ** *Cr.* (52 e; the hindwing is defective at the anal angle) is the South and East African race and may be known by having the marginal lines on the upperside of the forewing indistinct or partly broken up into spots; the eye-spots of the hindwing are not bounded basally by a transverse line or the line is finer and incomplete; the ground-colour of the under surface is yellowish, irrorated with brown. Angola to the Cape and Abyssinia. f. **obscurior** *Stgr.* is the dry-season form and only differs in the much darker, grey-brown or dark brown, under surface. — **ligata** *Rothsch. & Jord.* is the north-western race and is distinguished by having the marginal lines on the upperside of the forewing thicker and more distinct and the eye-spots on the hindwing above bounded on both sides by a thick transverse line composed of lunules; the under surface with yellowish ground-colour. Sierra Leone to Togo. f. **fuscata** *Rothsch. & Jord.* is the dry-season form of *ligata*, distinguished by its dark under surface. — The larva is beneath dark brown, above ochre-yellow with broad brown transverse bands, in which the spines are placed; the head is red-brown with two spines on the vertex, which are soft not prickly, but thickened into knobs at the tip. Pupa light green with brown lines and spots and less angular than those of *Precis*.

### 6. Genus: **Precis** *Hbn.*

A genus with numerous species, some of them common, and widely distributed in the tropics both of the Old and the New World. The species are particularly interesting on account of their often very sharply marked seasonal dimorphism and deserve to be closely studied in the whole region. Concerning the Indian *Precis* and their variation cf. vol. IX, p. 516—524.

The wings are rather short and broad; the forewing is more or less emarginate at the distal margin and at veins 2 and 6 angled or even long-produced; the hindwing, on the other hand, is rounded or at the anal angle lobed or tailed and at the middle of the distal margin angled or dentate. Upperside of both wings nearly always with a transverse row of eye-spots or black dots beyond the middle.

Larva almost cylindrical with short spines on the segments of the body and two prominences or short horns on the head; the first segment has above only small prominences, but at each side two short spines;

segments 2—10, on the other hand, have each 8—11 short spines, one in the mid-dorsum, one at each side of the dorsum and three on each side, of which the lowest on segments 6—9 is double; segments 2 and 3 lack the medio-dorsal spine, but are otherwise armed like segments 4 and 5; the 11th segment has no spine on the leg; the 12th only the three dorsal spines and the 13th (the anus) only two spines. — Pupa with obtuse, slightly emarginate head; dorsum and abdomen with short tubercles.

The species may be divided into groups according to the following synopsis.

#### Synopsis of the Groups.

- I. Hindwing at the extremity of vein 1 b distinctly produced, lobed or tailed, and always projecting more than at the end of vein 2.
  - A. Basal half of the forewing blue at least to the apex of the cell. Hindwing above with 1 or 2 large eye-spots (in cellules 2 and 5). First Group.
  - B. Basal half of the forewing not blue. Hindwing above without eye-spots or with a transverse row of 4—7 small ones.
    - a. Wings above dark brown — black-brown, without actual light transverse band, but with two black median lines, which enclose a sometimes darker, sometimes lighter (red-brown) transverse band. Distal margin of the hindwing at vein 5 distinctly, often very strongly angled. Second Group.
    - b. Wings above with light brown-yellow ground-colour or with a sharply defined, white — yellow — red transverse band in or somewhat beyond the middle.
      - \* Distal margin of the hindwing strongly undulate, lobed or dentate. Third Group.
      - \*\* Distal margin of the hindwing entire or only slightly undulate, rounded or at vein 4 angled. Fourth Group.
- II. Hindwing rounded at the anal angle, without tail or lobe at the extremity of vein 1 b; distal margin, however, sometimes projecting most at vein 2, more than at vein 1 b. Fifth Group.

#### First Group.

The species of this group have hitherto only been found in South and East Africa and in the Madagascar subregion. They may be easily known by the large eye-spots on the upperside of the hindwing and by the colouring.

**P. touhilimasa** *Vuill.* has, like the following species, 5 or 6 black transverse lines in the cell of the forewing above, but the upperside of the hindwing is bright blue at the base (♀) or to far beyond the middle (♂) and has two yellow, black-ringed eye-spots of equal size. Beneath both wings are brown, at the apex of the forewing and in the distal part of the hindwing more or less tinged with violet-grey; the forewing has 4 and the hindwing 3 whitish transverse lines, of which the distal one is straight and extends from the inner margin near the anal angle to the costal margin; the eye-spots are smaller than above, but quite distinct. The upperside of the forewing is coloured and marked almost as in *artaxia* (52 a). South-eastern part of the Congo region and in Rhodesia. *touhilimasa.*

**P. artaxia** may always be recognized by having the upperside of the hindwing uniform grey-brown to the base, with two eye-spots, the posterior one, in cellule 2, always smaller and occasionally even indistinct; the cell of the forewing above has 5 or 6 black transverse lines; the forewing above greenish blue to the apex of the cell, then with a broad black transverse band and in the distal part lighter blue with two dark transverse lines, of which the proximal becomes very broad posteriorly. — **artaxia** *Hew.* (52 a) is the dry-season form and is distinguished beneath by the hindwing having a straight brown or yellowish transverse line, which is continued also on the forewing, although less distinct; the ground-colour is slate-grey to dark brown and the eye-spots are entirely absent or only indicated. Angola to German East Africa, but not in South Africa. In the rainy-season forms the eye-spots are distinct beneath also, yellow with black rings, and the under surface more uniform dark brown without transverse line on the hindwing. f. **nachtigalli** *Dew.* has on the underside of the hindwing a violet-grey marginal band, 5 mm. in breadth, which almost reaches the eye-spots and is divided by a dark undulate line; the apex of the forewing beneath broadly violet-grey. Angola and Nyassaland. Apparently rarer than the following more extreme rainy-season form. f. **nobilitata** *Thur.* only differs from *nachtigalli* in having the underside of the forewing whitish at the apex and that of the hindwing at the distal margin only grey outside the black line and with a thick black-brown line between this and the distal margin; the eye-spots are larger and broadly separated from the light colour at the distal margin. Mashonaland and German East Africa. *artaxia.*  
*nachtigalli.*  
*nobilitata.*



*rhadama.*

**P. rhadama** Bdv. (52 c). Both wings blue above, with 4 transverse lines in the cell of the forewing, the veins, two lines before the distal margin, the costal margin of the hindwing and discal transverse spots in cellules 1 a—6 of the forewing black or blackish. In the ♀ the black markings are more strongly developed than in the ♂ and the costal margin of the hindwing is dark brown as far as vein 5; the forewing has 3 or 4 white dots before the apex and in the ♀ in addition 4 white discal spots in cellules 4—6 and 9 and a row of whitish lunules before the distal margin. Beneath the wings are sometimes white with a mixture of grey and brown, with narrow, nearly straight white median band on the hindwing and distinct eye-spots, sometimes almost uniform grey or grey-brown with indistinct eye-spots (= f. **arida** form. nov.; the dry-season form). Larva black with short black spines, yellowish white dorsal line, brown lateral line bordered beneath with white, and red-yellow collar; it lives on Acanthaceae of the genera *Justicia* and *Barleria*. Coast of Mozambique, Comoros, Madagascar, Bourbon, Mauritius and Rodriguez.

### Second Group.

The forms belonging here may be called the dark species of *Precis*. To the characters mentioned in the synopsis may be added that the eye-spots are small and of almost uniform size, occasionally incompletely developed: on the hindwing they usually form an almost continuous transverse row between veins 1 b and 7 and on the forewing they are distinct at least in cellules 1 b and 2 or form here also a complete row.

**P. chorimene** is of a dark yellow-brown ground-colour above, with yellowish-ringed eye-spots; the forewing has no white markings or at most a white dot in cellule 7; the outer of the dark median lines projects strongly distad at veins 4 and 5, is incurved between 4 and 2 and distally bordered by yellowish spots; the under surface is violet-grey with dark red-brown markings and a median line, quite straight on the hindwing. — **chorimene** Guér. (52 b). Distal margin of the wings moderately strongly angled; under surface with distinct eye-spots and sharp markings; hindwing at the costal margin with 1 or 2 light yellow spots proximally to the median line. Senegal to the Congo and Abyssinia. ab. **orthosia** Klug only differs in the absence of the light spots at the costal margin of the hindwing beneath. Among the type-form. — f. **angulata** form. nov. I give this name to a pronounced dry-season form, which is distinguished by having the distal margin of the forewing much more produced at vein 6, by the darker upper surface and the more uniform and weakly marbled under surface with the eye-spots quite indistinct. Abyssinia.

**P. stygia** differs from *chorimene* in having the ground-colour of the upper surface darker, especially in the ♂, and the outer median line of the forewing nearly straight and distally bounded by the dark ground-colour. — **stygia** Auriv. (52 b). Distal margin of both wings undulate; the hindwing distinctly produced at the extremity of vein 5; the under surface broadly suffused with violet-grey at the distal margin. Ivory Coast to Angola. — **gregorii** Btlr. seems to be the East African form and has the margins almost entire, the hindwing only feebly angled at vein 5; the under surface is more uniform grey and the hindwing has usually at the costal margin a yellow spot in cellule 7. Ruwenzori, Uganda and Brit. East Africa.

**P. natalica** Fldr. (52 c) may be at once known by having on the forewing three rather large white discal spots in cellules 4—6 and a white subapical dot in cellule 7; the markings are otherwise the same as in the other species, the interspaces between the black transverse lines of the cell and the median lines are, however, often filled in with red-brown and the eye-spots have red-brown rings; under surface sometimes more uniform with blurred markings and indistinct eye-spots, sometimes with sharp markings and distinct eye-spots. Angola to Natal and British East Africa. Said to occur also on Madagascar.

**P. goudoti** Bdv. (52 b) exactly agrees with the other species in markings, but is smaller, with the hindwing more elongated at the anal angle and a complete transverse row of white-pupilled eye-spots on the forewing. Madagascar.

### Third Group.

The forms of this group are distinguished by the undulate or dentate distal margin of the hindwing. It is worthy of note that the angle of the hindwing, when present at all, is placed at the extremity of vein 5, and not, as in the following group, at vein 4.

**P. terea** is black-brown above with a common yellow median band, extending from vein 9 of the forewing to the inner margin of the hindwing and slightly curved on the forewing; the hindwing has just distally to the median band a transverse row of eye-spots and the forewing at the apex 2—4 white subapical dots; the ground-colour of the under surface is light yellow. — **terea** Drury (51 f) is the West African race and has the yellow median band 5—8 mm. in breadth and divided by a fine dark line; the under surface is light yellow with fine brown transverse lines and grey nebulous spots in the distal part. Sierra Leone to Angola and Uganda. — **fumata** Rothsch. & Jord. is a transitional form to *elgiva*, the interspace between the dark basal part and the dark median line being more or less filled up with dark. Occurs on the borders of Angola and in Somaliland. — **elgiva** Hew. (51 f) has the yellow median band only 2—5 mm. in breadth and not divided; the under surface



has usually more markings than the type-form. Angola to Natal and British East Africa. — *tereoides* Bllr. *tereoides*. is unknown to me and is only described as being allied to *terea*, but the orange-yellow band abbreviated and only indicated by a more or less indistinct streak proximally to the dark brown median line; forewing as strongly falcate as in the dry-season form of *terea*. British East Africa to the Arusa-Galla country. Perhaps the same form as *fumata*?

**P. andremiaja** differs from all the other species in the shape of the hindwing, which has a long pointed tail at the anal angle and in addition a lobe or short tail at the end of vein 5 and is further acutely angled at the extremities of all the veins. Both wings above with common light median band, which in the ♂ is narrower, 2—6 mm. in breadth, and white with bluish margins, but in the ♀ 6—8 mm. and entirely or in part red-yellow to yellow-brown. Madagascar. **andremiaja** Bdv. (50 f; also as *musa*) is the rainy-season form and has the *andremiaja*. ground-colour of the underside yellowish, with sharply defined spots in the basal part and whitish median band; the median band of the upper surface is only red-yellow basally in the ♀. f. **musa** Guér. is the dry-season form *musa*. and has a more clouded under surface without white spots and without sharply defined median band; in the ♀ the median band of the upper surface is unicolorous red-yellow and very broad.

**P. limnoria**. The white-pupilled eye-spots of the upper surface are usually all present and are placed beyond the light, often very narrow or even indistinct median band; the cell of the forewing with 2 or 3 red-yellow, black-edged transverse streaks; at the distal margin of both wings a row of yellow or red-yellow spots. The median band is whitish or light yellow beneath and in the basal part there are on the forewing 3 and on the hindwing 2 white or yellowish transverse lines. — **limnoria** Klug is smaller and darker than the other forms, *limnoria*. with very narrow median band, only 1 mm. in breadth, and the markings of the under surface more indistinct. Arabia and Abyssinia. — **naib** Guér. is larger than *limnoria*, almost as large as *taveta*, and has the median band *naib*. on the upper surface quite as narrow and sometimes almost indistinct, but very distinct white markings beneath. Abyssinia. — **taveta** Rog. (52 b) is large, with bright yellow-red markings on the upper surface and the median *taveta*. band 2 mm. in breadth; the second transverse streak in the cell of the forewing is prolonged posteriorly to beyond vein 2; the under surface is dark with sharply marked white or yellowish transverse lines or bands. German and British East Africa, Somaliland.

**P. guruana** Rog. is unknown to me and is described as follows: "Wings black-brown, beyond the middle *guruana*. with a common reddish transverse band, which at the costal margin of the forewing is narrow and curved based; it is basally bordered by a row of black dots and before the apex accompanied by three white dots; the hindwing with a row of fine black dots in the transverse band and the fringes chequered; wings beneath dark brown, chequered with grey in the middle; the transverse band reddish, proximally whitish, distal part grey with a row of dots as above". BUTLER asserts that *guruana* is an extreme rainy-season form of *limnoria*; but according to the description it seems rather to be a form of *archesia*, since in *limnoria* the median band of the forewing is nearly straight, while in *archesia* it is distinctly curved basewards at the costal margin.

**P. archesia**. The black submarginal dots on the hindwing and in cellules 1 b—3 of the forewing are placed in the light median band; the latter is bifurcate at the costal margin of the forewing, with the proximal branch distinctly curved basad; the submarginal dots of the hindwing usually without white centres; those of the forewing on the contrary normally white-pupilled, or entirely white (in cellules 4—6). The fringes of both wings white-spotted. Through numerous experiments made by G. A. K. MARSHALL and others it has been proved that the following forms, formerly quoted as separate species, are only seasonal forms of *archesia*. Thus transitions between the extreme forms are not rare. The species occurs in South and East Africa as far as Angola and the Victoria Nyanza. The larva is black sprinkled with small white dots and lives on a species of *Plectranthus*. — **archesia** Cr. (52 a) is the dry-season form; the median band of the upper surface is red-brown *archesia*. and moderately broad on the hindwing and in cellules 1 a—3 of the forewing, the proximal branch is blue or whitish and the distal narrow and brown or absent; the cell of the forewing is adorned with 2 or 3 bluish transverse streaks; the under surface is grey or brown and marbled with darker spots and lines; the median band is very narrow, a mere line, whitish with black edges. f. **staudingeri** Dew. is an intermediate form, agreeing *staudingeri*. with *archesia* above but beneath almost without the spots and with the ground-colour dark brown in the basal part, grey distally. f. **semitypica** Auriv. is a second transitional form, more nearly approaching the rainy-season *semitypica*. form; the median band on the upperside is lighter and broader than in *archesia*, but darker and usually also narrower than in *pelasgis* and red-yellow to the costal margin of the forewing; beneath it is broader than in *archesia*, 2—5 mm., but distally blurred, not sharply defined as in *pelasgis*; the cell of the forewing above with blue transverse streaks; the basal part of the under surface is unicolorous black-brown without distinct spots. f. **chapunga** Hew. is also a transitional form, agreeing with *pelasgis* beneath, but distinguished above by having *chapunga*. the red-yellow band very narrow and as far as vein 4 broken up into rounded, black-pupilled spots. — f. **pelasgis** *pelasgis*. Godt. (52 a) is the extreme rainy-season form, with the median band sharply defined, 4—5 mm. in breadth,



above light yellow, beneath nearly white, the ground-colour black-brown, without spots, or beneath with light spots in the basal part; the spots are, however, sharply defined, never nebulous; the cell of the forewing above *striata*. usually with some reddish transverse streaks. ab. *striata* Auriv. is a form of *pelasgis* in which the dark basal area of both wings is ornamented above and beneath with two rows of blue streaks and the median band is light red-yellow instead of white on the under surface. In the Congo region near M'Bako. — STRAND describes *frobeniusi*. as *frobeniusi* a form from Liberia, which is unknown to me. The description runs: "The two proximal of the usual 4 blue transverse streaks replaced by thick light red ones, the two distal scarcely lighter than the ground-colour, but with deep black bordering; the light transverse bands and the submarginal dots almost exactly as in *coelestina* Dew., the bands, however, a little narrower, the spots in cellules 1 b, 2 and 3 proximally cut off transversely and with brilliant white, broadly black-ringed pupils, of which the one in cellule 2 is the largest; the bands anteriorly forked as in *coelestina*, but the distal branch is distinctly broken up into spots, whilst the proximal is much narrowed posteriorly; the white dots placed between the two as in *coelestina*. The red spots in the band of the hindwing smaller and with larger black pupils than in *coelestina*; the marginal bands as in *archesia*, but more sharply marked; blue or blue-white dusting on the hindwing, such as occurs in the type-form, is here only present on the tail-appendage; the ground-colour a little darker. The upper surface really more resembles *coelestina* than *archesia*, but that we are dealing with a form of the latter species is proved by the under surface, which agrees very well with *archesia*; here, however, it is duller and more unicolorous, as the grey-whitish dusting which in the type-form is developed into 5 or 6 transverse bands or patches is here entirely or almost entirely absent; a darker submedian band on the hindwing is not or scarcely visible; the reddish transverse band darker, red-brown, on the hindwing with black dots, on the forewing with white ones, about as in the type-form, but that in cellule 2 considerably larger than the neighbouring ones, of which that in cellule 3 is as distinct as that in cellule 1 b". *coelestina* can always be easily distinguished from *archesia* by the entire-margined, unicolorous fringes. As, however, STRAND in his long description says nothing about this important character, it is impossible for me to decide whether *frobeniusi* belongs to *archesia* or to *coelestina*. Found near the border of Liberia in Upper Guinea; *archesia* is not otherwise known from this part of Africa.

#### Fourth Group.

The species of this group may be known by the entire-margined or only slightly undulate fringes. The black submarginal dots are placed on both wings in the light transverse band or are entirely absent.

*coelestina*. **P. coelestina** Dew. (51 e) has the upperside of the wings uniform dark brown with red-yellow markings; the cell of the forewing with 3 black-edged, red-yellow transverse streaks, of which the second reaches vein 2; the median band is bifurcate at the costal margin and encloses three round white dots; behind vein 4 it is completely broken up into free, oval, black-dotted spots; the black dots in cellules 1b—3 of the forewing usually with white pupils; both wings at the distal margin more or less red-yellow with the two usual dark marginal lines. Both wings beneath dark violet-brown with broad dark chestnut-brown median band and white submarginal dots on the forewing, but otherwise without distinct markings; the fringes are unicolorous grey-brown. *jordani*. Cameroons to Angola, Uganda and Somaliland. f. *jordani* form. nov. is the rainy-season form and only differs in the slightly undulate, white-spotted fringes; the under surface somewhat more distinctly marked. Rarer than the type-form.

*eurodoce*. **P. eurodoce** Westw. (51 e) is black-brown above with simple red-yellow transverse band, which on the hindwing is widened to the distal margin and there encloses the two dark marginal lines; the black submarginal dots are very small or indistinct; the under surface is reddish yellow-brown, somewhat clouded, and has a sharply defined red-brown median line, which, however, terminates at vein 4 of the forewing; the tail at the anal angle of the hindwing is narrow and 5 mm. in length; the fringes are unicolorous and entire-margined; cellules 6—8 of the forewing are narrow, hence the projection at vein 6 apparently forms the apex of the wing. Madagascar.

The three following species are very nearly allied and agree almost entirely in colour and markings. Both wings above in the dark distal part with two continuous, indistinct grey marginal lines. The median band of the upper surface encloses the black submarginal dots, is broad and continuous, violet-red — red-brown — yellowish or occasionally on the hindwing whitish, and at the costal margin of the forewing always simple (without distal branch). The black ground-colour of the basal half of the forewing above makes an incision into the transverse band in cellule 3 and the forewing has nearly always 1—3 white subapical dots. The under surface is more or less leaf-like with distinct dark median line. The distal margin of the forewing is distinctly, often very strongly produced at vein 6, that of the hindwing on the other hand uniform or somewhat ventricose; the fringes are entire-margined or rarely somewhat undulate and nearly always unicolorous.

*sinuata*. **P. sinuata** Plötz (51 e) is smaller than the others with an expanse of 42—48 mm. and has a narrower median band, only 5—6 mm. in breadth in cellule 2 of the forewing; the distal margin of the forewing is very deeply excised between veins 2 and 6; the under surface is almost uniform red-brown with no spots and without light streaks at the distal margin. Sierra Leone to the Congo, Nyassaland and Uganda. — **pelargoides** Auriv. has the under surface lighter and more spotted, with distinct white streaks or spots at the distal margin; the forewing is less falcate; evidently constitutes a rainy-season form. Cameroons and Congo region. — ab. **parvipunctis**.



**vipunctis** Strand. The median band of the hindwing without black dot in cellule 7; only cellule 5 of the forewing with distinct white subapical dot. Cameroons.

**P. tugela** has an expanse of 50—58 mm. and the hindwing is more elongate; the median band has a breadth of 6—7 mm. in cellule 2 of the forewing and in the ♀ is often yellowish. — **tugela** Trim. (51 c) has a long, straight projection at the extremity of vein 6 on the forewing; the under surface very variable, but mostly uniformly coloured. Natal to Nyassaland. f. **aurorina** Btlr. is a rainy-season form, and only differs in having the forewing but little produced at vein 6, often scarcely more than angled. — **pyriformis** Btlr. occurs in German and British East Africa and scarcely differs from *tugela*. — **wintgensii** Strand is said to differ in having the distal margin of the forewing strongly emarginate at vein 2 and the distal branch of the median band of the forewing indicated by three reddish spots. Ruanda.

**P. milonia** Fldr. has shorter and broader wings and a broader median band on the upper surface, 8—12 mm. in breadth in cellule 2 of the forewing; the forewing is moderately produced at the extremity of vein 6. Cameroons and Congo. — **rauana** Smith seems to be an eastern race, only distinguished by having the median band of the hindwing whitish. Uganda.

The two following nearly allied species differ from the preceding in the upperside of the wings having 1 or 2 rows of blue dots or streaks in the dark distal margin. The distal margin of the hindwing is uniformly curved, without angles, and the fringes are either entire-margined and unicolorous or slightly undulate and spotted with white. The distal branch of the median band of the forewing is absent or only indicated by free spots in cellules 4—7.

**P. actia** gives quite the impression of an eastern race of *pelarga*, but as ROTHSCILD and JORDAN state that the male copulatory organs are differently formed I cite the two forms provisionally as separate species, although the rainy-season forms seem to run into one another. The sole difference in the markings which is common to both seasonal forms is that the spot of the median band in cellule 3 of the forewing is short and almost quadrate in *actia* and has the black dot in the middle, whilst in *pelarga* this spot is longer than broad and has the black dot near its distal side. This difference is, however, sometimes very trifling. Angola, Nyassaland, German and British East Africa. **actia** Dist. (51 d) is the dry-season form and characterized as such by the falcate forewing, the entire-margined, unicolorous fringes, the longer tail and the uniform grey-brown or red-brown, leaf-like under surface, divided by a dark line, as well as by its larger size. It differs from the corresponding form of *P. pelarga* in having the distal blue marginal streaks on the upper surface placed at the distal margin and usually united into a thick marginal line. The median band is red-brown, at its proximal side more or less blue; its inner branch at the costal margin of the forewing is always blue in the ♀, blue or light yellowish in the ♂; at the end of the cell of the forewing two blue transverse streaks and in the middle a red-brown one. ab. **rubrofasciata** Suff. differs from *actia* in the entire absence of the blue colour at the proximal side of the median band. f. **furcata** Rothsch. & Jord. (51 d as *galami*; = *albofasciata* Suff.) is the rainy-season form and as such has the fringes spotted with white and slightly undulate, the forewing only projecting a little at vein 6 and the under surface light yellow with distinct whitish, black-dotted median band and blackish marginal band with two rows of whitish marginal streaks. The median band of the upper surface is white as far as the submarginal dots and then red-yellow with the colours sharply defined. Nearly approaches certain specimens of *pelarga* F. and *galami*.

**P. pelarga** F. is the rainy-season form and exactly agrees with *furcata* in the shape of the wings, the white-spotted fringes and the under surface. The spot of the median band in cellule 3 of the forewing is, however, as already mentioned, longer than broad and the median band of the upper surface is either entirely red-yellow or basally white-yellow without sharp boundary-line between the colours. Senegal to Angola and Abyssinia. f. **galami** Bdv. is an extreme rainy-season form, commoner in West Africa than *pelarga*, and only differing in having the forewing still more obtusely rounded at vein 6 and the median band of the upper surface more uniform in breadth and almost entirely white-yellow; the wing-expanse only reaches about 45 mm. and the median band has a breadth of 5—6 mm., the distal branch of the median band at the costal margin of the forewing is very indistinct or entirely absent. f. **leodice** Cr. is the dry-season form and has the wings the same shape as in *actia* and *harpyia* (51 d); the fringes are entire-margined and unicolorous or with small white spots; the median band of the upper surface is 6—8 mm. in breadth, light red-yellow, unicolorous or basally more or less whitish; the under surface is usually not so dark and so uniformly coloured as in dry-season forms from other districts, which is naturally connected with the climatic conditions in West Africa, the median band and the submarginal dots being often quite distinct beneath also, on the other hand the two rows of white spots at the distal margin, present in the rainy-season form, are always absent. ab. **harpyia** F. (51 d) only differs from *leodice* in having the median band of the upper surface for the most part bright blue.

**P. cernye** differs from all the other species of this group in having the hindwing angled or with a short tail at the extremity of vein 4 and the transverse band of the forewing proximally cut off almost straight. The transverse band of the upper surface is broad, 5—6 mm., with distinct black submarginal dots on the hindwing and in cellules 1 b—3 of the forewing, and from vein 4 of the forewing onwards divided into two very distinct branches, of which the proximal is broader and composed of 3 or 4 spots and the distal narrower



and consisting of 5 spots; the cell of the forewing above has two thick yellowish or red-brown transverse streaks, the distal one almost reaching vein 1. The species includes two races, a southern, which occurs from Angola to Natal and in East Africa to Uganda and Abyssinia and has two sharply separated seasonal forms, and a northern, occurring in the Niger region and in the Hinterland of the Cameroons and hitherto only known as a rainy-season form. — *ceryne* Bdv. (51 d) is the rainy-season form; the median band of the upper surface is whitish proximally to the submarginal dots; the fringes are undulate and spotted with white; on the under surface the markings stand out very sharply, the basal half is bright ochre-yellow with some whitish, black-edged spots and separated by a black transverse line from the broad whitish median band; the black submarginal dots stand out as sharply as above and those in cellules 4—6 of the forewing are white-centred; before the distal margin a row of white, black-bordered streaks; the distal margin of the forewing is rounded at vein 6. f. *tukuoa* Wallgr. (51 c) differs very considerably above in the brown-red transverse band and the unspotted fringes and beneath in the uniform yellowish under surface, spotted and irrorated with dull brown, and with the submarginal dots indistinct; the distal margin of the forewing is sharply angled or produced into a point at vein 6. — *ceruana* Rothsch. & Jord. is only known as a rainy-season form and differs from *ceryne* in the much darker marginal band on the under surface. Niger and Cameroons Hinterland.

The last two species have also quite different seasonal forms, but may be known by the entire absence of the white subapical dots in cellules 4—6 of the forewing above. Occasionally two dots are present, in which case, however, the basal part of the hindwing above is almost entirely red-yellow. The basal part of the upper surface, which in the previously described species is almost black, shows here a distinct tendency to become red-yellow, so that the black colour only remains as spots or dentate transverse bands; this is especially distinct in the dry-season forms. The seasonal forms show parallel differences in both species. In the rainy-season forms both wings have above a sharply defined black marginal band with two rows of whitish dots or lunules and white-spotted fringes; the forewing is at vein 6 only weakly angled or nearly rounded and the under surface is similar to the upper, with the basal part black or black-spotted, broad red-yellow median band dotted with black and black marginal band with large white spots. The dry-season forms are larger and have the forewing falcate at vein 6, the hindwing with a longer tail at the anal angle, the fringes entire-margined and unicolorous, the basal part of the wings above red-yellow with black spots and both wings beneath dark brown — violet-grey — grey-brown, quite uniform or nebulous, but without black markings and white spots and only with fine dark or light median line.

*cuama*. **P. cuama** Hew. is the dry-season form and only differs from *antilope* (51 c) in having the black markings of the upper surface more reduced, the dark marginal band on the upperside brownish and especially in the submarginal dots in cellules 4 and 5 of the forewing containing distinct white or silvery pupils. Manicaland, Mashonaland, Nyassaland and German East Africa. *trimeni* Btlr. (51 c) is the rainy-season form, and nearly agrees with *simia* above, but differs beneath in having the basal half yellow spotted with black.

*antilope*. **P. antilope** occurs in the southern Congo region and thence into South Africa as far as to Natal and East Africa to Abyssinia, again occurring in Senegal. *antilope* Feisth. (51 c) is the dry-season form and only differs from *cuama* in the absence of the white subapical dots of the forewing and the somewhat more extended black markings of the upper surface. — f. *simia* Wallgr. (51 b) is the rainy-season form and only differs from *trimeni* in having the wings beneath black at the base with 3 or 4 large light yellow spots; the black colour reaches at least to vein 3.

#### Fifth Group.

The species of this group are easy to distinguish from all the others by the rounded anal angle of the hindwing. Here also occur seasonal forms, which, however, usually only differ beneath; only in the first species, which in the coloration and markings of the rainy-season form closely approximates to the last two species of the preceding group, are the seasonal forms quite different above also.

*octavia*. **P. octavia**. Distal margin of both wings strongly undulate with white-spotted fringes; the dark marginal band 1—6 mm. in breadth and enclosing two rows of blue dots or streaks, which are sometimes small, sometimes thick and joined together; the black submarginal dots are well developed and distinct. In the rainy-season forms the wings are red-yellow for the most part on both surfaces and only at the base and the distal margin narrowly black; the distal margin of the forewing is only shortly angled at vein 6. In the dry-season forms the wings are bluish dark black-brown and with the exception of the submarginal dots only ornamented with a row of red-brown spots; on the upperside these spots are always distinct and sharply defined on the hindwing and in cellules 1 a—3(—5) of the forewing, but beneath often indistinct or quite blurred; the under surface is always dark and more or less clouded; the basal half is bounded by a curved dentate line; the submarginal dots in cellules 5 and 6 of the forewing are white-pupilled, which does not occur in the rainy-season form. *octavia*. The species has two local races: — *octavia* Cr. (51 b) is the rainy-season form of the north-western race, which is distributed from Sierra Leone to the Congo, Abyssinia and Somaliland; it is smaller than the southern rainy-season form and has the ground-colour darker, more brownish red-yellow. — f. *amestris* Drury is the dry-season form of *octavia* and only differs in having the upper surface of both wings not or but little blue at the base and in the cell of the forewing above bearing 1 or 2 red-brown transverse streaks. — *sesamus* Trim. (51 c) is the dry-season form of the southern race, which occurs from Angola to the Cape and British East Africa; it is distinguished by having the upperside of both wings suffused with blue at the base and by the entire absence of the red-brown transverse streaks in the cell of the forewing. — f. *natalensis* Stgr. (51 c) is the rainy-season form of *sesamus* and is distinguished from *octavia* by the lighter reddish ground-colour and by having the black markings more reduced, particularly in the basal part. The larva lives in Natal on *Plectranthus calcinus*; it



is dorsally dark brown with yellow transverse bands and ventrally blackish; the spines on the vertex are longer than the rest.

**P. sophia** is the smallest of the African species and has an expanse of only 38—46 mm. The upperside of the forewing is darker or lighter brown at the base as far as the apex of the cell, with 5 black transverse lines in the cell, and that of the hindwing black to vein 3; then follows a common light median band about 5 mm. in breadth, which is divided into spots by the dark veins; the black-brown distal part encloses the black submarginal dots and two marginal lines and is adorned on the forewing with a subapical band composed of three light spots (in 4—6). The under surface (51 b) is yellowish white with brown veins, fine black lines at the base and the anal angle of the hindwing, sharply prominent black submarginal dots, two brown, black-edged transverse streaks in the cell of the forewing and brown or grey nebulous spots at the distal margin. — *sophia*. **phia** *F.* (51 b) has in the median band of the forewing a curved dark transverse line, extending from the lower angle of the cell to vein 1, where it almost reaches the dark marginal band; the median band and the subapical band of the forewing are light brown-yellow. Larva black with fine yellow lateral line and short spines; the spines on the vertex are very short, wart-shaped. The pupa is more or less watered with brownish and has two or three dark nebulous bands crossing the wing-cases; the head is obtuse and shallowly emarginate with short prominences on the eyes. Senegal to the Congo and Uganda, Natal. — **infracta** *Rog.* (51 b) only differs *infracta*. in having the dark, oblique transverse line in cellules 1b and 2 of the forewing absent or only indicated. German East Africa to Uganda and Abyssinia. ab. **albida** *Suff.* (51 b) has the median band and subapical band on the *albida*. forewing white, but otherwise agrees with *infracta*; is commoner in German East Africa than the form with yellow bands. — ab. **leucotincta** *Strand* agrees with *albida* in the white bands and apparently merely differs in *leucotincta*. having the median band of the forewing narrower and only developed in cellules 2—4. Abyssinia.

**P. westermanni** has the sexes quite different; the ♂ is very strikingly marked above, deep velvety black with a blue longitudinal spot at the costal margin of the hindwing in the basal part of cellules 6 and 7 and two large orange-yellow areas, one on the forewing beyond the middle in cellules 1 b—5(—6) and one on the hindwing near the distal margin between veins 1 b and 5; in this area 1—3 black submarginal spots are sometimes visible. The ♀ is quite unlike the ♂ above, but individually very variable; usually both wings are black-grey above with black transverse streaks in the cell of the forewing and with indications of red-yellow spots at least in 1 b and 2; sometimes there are whitish longitudinal spots in cellules 2—6; the hindwing has a very broad red-yellow median band, about 11 mm. in breadth, with sharply prominent black submarginal dots, and is thus only black-grey at the base and the distal margin for a breadth of about 3 mm.; the under surface is more like that of the ♂. — **westermanni** *Westw.* (50 e; 51 a). ♂. The orange-yellow area of the forewing does *westermanni*. not completely cover the base of cellule 3; the under surface at the base whitish grey or grey (or on the forewing yellowish) with sharply prominent black spots and transverse lines, of which 5 are in the cell of the forewing; the black submarginal dots are distinct at least on the hindwing and the orange-yellow area of the forewing stands out more or less distinctly beneath also. The ♀ is very variable, but usually agrees with the description given above. Gold Coast to Angola. — **jordani** *form. nov.* The ♂ is smaller and the orange-yellow area *jordani*. of the forewing completely covers the base of cellule 3; the under surface has sharp black markings as in the type-form, but has a much darker ground-colour, on the forewing to beyond the middle orange-yellow, but on the hindwing dark grey with sharply prominent silver-white spots at the middle of the costal margin in cellule 7 and with the base of cellule 2 on the hindwing bright brown-red; the ♀ is unknown to me. Ruwenzori. — **suffusa** *Rothsch. & Jord.* is as small as *jordani* or smaller and on the upperside of the male similar to it, but *suffusa*. beneath in both sexes recognizable by having the hindwing clouded, red-brown to rust-brown, without distinct markings. British East Africa: Kikuyu. Gives quite the impression of a dry-season form.

**P. hadrope** *Dbl. & Hew.* (50 c; 51 a) is a very distinct species, in which the sexes are quite different; *hadrope*. the ♀ was described by BUTLER in 1866 as a separate species (*ixia*); in my work "Rhopalocera Aethiopica" I first pointed out the identity of this ♀ with *hadrope*. In the ♂ the wings are dull gold-yellow above with narrow dark marginal band, a large black apical area on the hindwing and two blackish transverse bands on the forewing, of which the distal is interrupted in the middle and partially united with the distal margin; the under surface is yellowish with some black and brown markings and brownish median line on the hindwing; the submarginal dots occur as eye-spots. The ♀ is white above with the base dark brown as far as vein 3, with two dark marginal lines, yellow-ringed submarginal eye-spots, of which those in cellules 2 and 5 of the hindwing are larger, a brown spot near the apex of the hindwing and a dentate discal line on the forewing. Hitherto only found in Ashanti.

**P. oenone** *L.* agrees in the markings of the upper surface with *westermanni* in having near the base *oenone*. of the costal margin of the hindwing a blue spot, which, however, is here rounded, and in each wing a large yellow area, but the one on the forewing is directed from the costal margin towards the middle of the distal



margin and is irregular in shape; the type-form only occurs in South Asia (cf. vol. IX, p. 524; vol. I, p. 197, pl. 62 b). — **cebre***ne* Trim. (51 a) differs from the type-form in the smaller ochre-yellow areas, which are light yellow in the middle, and the more rounded blue spot. In the ♂ the base of the forewing is velvety black as far as vein 2, but the outer parts of the cell are unicolorous yellow without black markings; there is a yellow, black-pupilled eye-spot in cellule 5 and before it a whitish yellow subapical band. The ♀ has the ground-colour of the upper surface brown-black, the yellow area of the hindwing more extended, a black transverse streak at the end of the cell of the hindwing and a large blue-pupilled, black eye-spot in cellule 2 of the hindwing behind the middle. Arabia, Socotra and everywhere, on the continent of Africa south of the Sahara. — *paris*. **paris** Trim. only differs in having the cell of the forewing above black to the apex with a fine blue transverse streak and the subapical band of the forewing only represented by two small dots; the under surface of the hindwing is often reddish or brownish. Madagascar. — The larva lives in Natal on species of *Barleria* and *Justicia*; it is dark violet-grey with broad blackish lateral line, which is bounded beneath by yellowish streaks, and with black spines. The pupa is chocolate-brown with small yellow and white spots and dots.

*clelia*. **P. clelia** Cr. (51 a). The wings are velvety black above in the ♂ with a large rounded blue spot, with violet and green reflections, at the costal margin of the hindwing; this spot covers the apex of the cell and the base of cellules 4—7; the hindwing has in addition a white marginal band, 2 mm. in breadth, which is divided by the black veins and by two black marginal lines thickened at the veins, and two black eye-spots with yellow rings and white pupils, one in cellule 2 and the other in cellule 5; the forewing has 1 or 2 small red-brown streaks in the cell, a curved white discal band, composed of 5 spots and extending from the middle of the costal margin to vein 3, a white submarginal band between veins 2 and 8, which, however, is indistinct or interrupted in cellules 4 and 5, and finally two white spots in 5 and 6 close to the distal margin; the under surface of the forewing is black with grey apex and almost the same markings as above, except that the cell is bluish with three thick, red-brown, black-edged transverse streaks; the hindwing is grey beneath with nebulous brown markings and a thick dark brown transverse band beyond the middle, in which the usually indistinct eye-spots are placed. The ♀ is similar to the ♂ beneath, but has the ground-colour above somewhat lighter and the eye-spots much larger and present also in cellules 2 and 5 of the forewing almost as distinctly as on the hindwing. Occurs everywhere on the continent of Africa and in addition on the Comoros, Socotra and Aldabra. — It is a well-known fact that the eye-spots of the Satyrids and other butterflies in which such spots occur are very variable. Hence if in a species which has normally 7 eye-spots for instance, aberrations are erected and named according to the presence and relative development of the eye-spots, one may enrich the literature with hundreds of names in every such species. But whether science can derive any benefit from it is another question, to which it is difficult to give an affirmative answer. For the good of science and the credit of lepidopterists it would be much better to investigate the limits and the causes of the variation. We may be permitted to make these remarks in view of the following trifling and scarcely more than individual aberrations. — ♂-ab. **viridata** Strand has the costal spot on the upperside of the hindwing green instead of blue; *bipupillata*. is it artificial or natural?! German East Africa: Amani. — ♀-ab. **bipupillata** Strand. The hindwing above with a *triocellata*. small eye-spot in cellule 6 also. Abyssinia. — ♀-ab. **triocellata** Strand. The hindwing above both in 4 and in 6 with a small eye-spot, which adjoins the larger eye-spot in cellule 5. German East Africa and Abyssinia. — ♀-ab. *posterior*. **posterior** Strand. The small eye-spot in cellule 6 on the hindwing above is wanting, but that in 4 is present. *subtriocellata*. Abyssinia. — ♀-ab. **subtriocellata** Strand. As *triocellata*, but of the anterior small eye-spot only the red distal ring *subbipupillata*. is present (!). Abyssinia. — ab. **subbipupillata** Strand. As *bipupillata*, but the small ocellus placed at the anterior side of the large anterior ocellus (eye-spot) on the hindwing is quite rudimentary and only indicated by an obtusely tooth-shaped, anteriorly directed prolongation of the red marginal ring of the large ocellus (!). Abyssinia. — ♀-ab. **virilis** Strand is a female form in which the blue spot on the hindwing is as large as in the ♂. *vosseleriana*. Abyssinia. — ♀-ab. **vosseleriana** Strand is smaller than normal and has the spot on the hindwing light greyish *subepiclelia*. but as large as in the type-form. German East Africa. — ♀-ab. **subepiclelia** Strand strongly recalls the Madagascar race, but has the white markings as large as in the type-form. — **epiclelia** Bdv. (51 a) only occurs on Madagascar and differs from the continental form in its smaller size and the smaller white spots on the forewing; in addition the blue spot of the hindwing is in the ♀ often absent or indistinct and greyish and the transverse bands in the cell on the underside of the forewing are pure yellow instead of red-yellow. — The larva of *clelia* is very similar to that of *cebrene*, scarcely differing except in the whitish lateral line; it lives in Natal on *Asystasia coromandeliana*. The pupa is similar to that of *cebrene*.

*orithya*. **P. orithya** L. was first described from specimens from China; cf. vol. I, p. 197, pl. 62 b and vol. IX, p. 522. It approximates to the preceding species and has almost the same white markings on the forewing, while both wings bear two distinct yellow eye-spots with black rings in 2 and 5; the blue colour, however, does not form a round spot at the costal margin of the hindwing, but covers at least the whole distal half of the wing and also forms a quadrate spot in cellules 1 a and 1 b of the forewing near the anal angle. — *madagascariensis*. **gascariensis** Guén. (= *hoopis* Trim.) is the race occurring in Africa and on Madagascar; it is smaller than the



type-form, with the light markings of the forewing reduced and yellowish white instead of pure white; the light discal band of the forewing is completely separated from the submarginal band; the cell of the forewing has distinct red-yellow transverse streaks and the blue colour of the hindwing in the ♂ is broader at the costal margin, reaching the base of cellule 7, but in the ♀ of uniform breadth, not or scarcely reaching the apex of the cell; the ♀ is otherwise distinguished from the ♂ by the much larger eye-spots on the upper surface and duller colouring. Congo to Natal and Abyssinia; Madagascar. — *here* *Lang* is even smaller and has *here* no red-yellow transverse streaks in the cell of the forewing. Arabia.

### Resumé of the seasonal dimorphism of the genus *Precis*.

As no other genus of the African butterflies shows such great and striking differences between the seasonal forms as *Precis*, it is of interest to give a survey of the characters in which the seasonal forms differ from one another. If we regard the rainy-season forms as the normal and original, which is probably correct, we may say that the variations of the dry-season forms have almost throughout the object of giving them an appearance which exactly harmonizes with their environment during the dry season. The greater are the differences between the seasons in a district and the more the vegetation becomes yellow and parched, the more also do the dry-season forms of the *Precis* species differ from those of the rainy season. The characters which are specially affected are the size, the shape of the wings, the colour and form of the fringes, the markings and colouring of the upper surface and quite especially those of the under surface. The dry-season forms are always larger in *Precis* than those of the rainy season; one would expect the contrary, as all nature is far more luxuriantly developed during the rainy season; but if one considers that the larvae of the dry-season forms are developed during the rainy season and those of the rainy-season forms on the contrary during the dry season, this fact is probably sufficient to account for the differences in the size. In all the *Precis* species the distal margin of the forewing projects somewhat at the extremity of vein 6; in the rainy-season forms, however, the wing is here obtusely rounded or only weakly angled, but in those of the dry season there is a sharp, sometimes very long point, so that the forewing becomes more or less falcate, and at the same time the anal angle of the hindwing is produced into more of a tail (not, however, in the dry-season forms of *octavia*); hence the wings present a leaf-like appearance, particularly in the attitude of resting. The fringes in the dry-season forms are usually unicolorous and entire-margined, even when the rainy-season forms have them undulate and spotted with white. The markings of the upper surface are usually but little changed in the dry-season forms: the white colour is, however, nearly always replaced by red-yellow or blue and occasionally also the red-yellow markings of the rainy-season forms are almost entirely suppressed and replaced by dark blue or dark brown ones. The under surface, which in the rainy-season forms has often bright colours and sharp markings, is on the other hand entirely altered and changes into a duller yellow-brown, dark brown or grey-brown, which has no markings or only indistinct ones, but is nearly always traversed by a light or dark median band.

### 7. Genus: *Vanessula* *Dew.*

When HEWITSON in 1873 described the sole species of this genus he placed it among the Lycaenids. To DEWITZ belongs the credit of having first detected that this peculiar little species belongs to the Nymphalids, as is proved both by the structure of the forelegs and by the neuration. The palpus is long and projecting; the antenna is likewise long and has a well defined, flattened club; the wings are rather broad with rounded, undulate distal margin; the abdomen almost reaches the anal angle of the hindwing. The early stages are unknown.

**V. milca** *Hew.* (52 e). Both wings black above with a common deep red-yellow median band, extending *milca*. from the middle of the inner margin of the hindwing in a nearly straight line and with a breadth of 4—5 mm. to vein 4 of the forewing and then narrowed and curved somewhat towards the base, reaching the stalk of veins 7—9. The ground-colour of the under surface is somewhat lighter with whitish striae in the basal part and grey and red-brown nebulous spots in the marginal band; the median band is on the hindwing white-yellow, watered with brown, and on the forewing sharply defined and unspotted, but somewhat lighter red-yellow than above. Cameroons to the southern Congo region and Uganda.

### 8. Genus: *Pyrameis* *Hbn.*

With regard to this well-known genus it is sufficient to refer to the synopsis (p. 210) and to the descriptions in vol. I, p. 198 and vol. IX, p. 524. In the Ethiopian Region only one species occurs.

**P. cardui** *L.* (vol. I, p. 199, pl. 62 d; vol. IX, p. 524) is very remarkable for its almost entire lack of susceptibility to external influences; the species occurs with almost identical colouring and markings in North Europe on the coasts of the Arctic Ocean and in the tropics of Africa and Asia. In the Ethiopian Region it is found everywhere both on the continent and on the islands; in the warmer districts, however, it seems to prefer the higher elevations. According to FAWCETT the larva in South Africa is similar to the European and lives there also on thistles. *cardui*.

### 9. Genus: *Antanartia* *Rothsch. & Jord.*

The species of this genus were formerly placed in *Hypanartia* *Kirby*, otherwise only occurring in South



America, with which they have superficially a very great similarity. Through the investigations made by ROTHSCHILD and JORDAN in 1903 it has, however, been established that the South American *Hypanartia* species differ entirely from the African species in the structure of the last dorsal plate of the abdomen. Hence the new genus *Antanartia* was erected for the latter.

The antenna is long, extending far beyond the apex of the cell of the forewing; its club is sharply defined, oval and much flattened. The cell of both wings is closed. Veins 10 and 11 of the forewing arise before the apex of the cell and vein 9 from the stalk of 7+8, much nearer to 8 than to the apex of the cell. Vein 3 of the hindwing arises distinctly before the lower angle of the cell and the precostal vein is long and quite straight or curved a little towards the base. In the nearly allied genus *Pyrameis* the precostal vein of the hindwing is curved distad and vein 3 of the hindwing arises from the lower angle of the cell.

The ground-colour of the wings above is blackish to dark brown and the forewing has on both surfaces an obliquely placed red-yellow transverse band which begins at the costal margin before the middle and extends in a gentle curve to the hindmargin near the anal angle, covering the apex of the cell; on the upperside this is usually continued more or less distinctly at the distal margin of the hindwing. Before the apex of the forewing there is a curved row of white submarginal dots and between these and the transverse band usually a transverse row or band of three small whitish or light yellow spots in cellules 5, 6 and 8—10. The hindwing has a more or less complete row of submarginal eye-spots and its under surface is dark with confused cloudy markings.

Larva spined as in *Pyrameis*. Pupa with two long sharp points on the head and strongly developed protuberances on the dorsal surface; the elevation on the mesothorax is large and at the end strongly compressed, wedge-shaped and the tubercles on the third abdominal segment are bent round like hooks.

I divide the species into two groups.

### First Group.

Distal margin of the hindwing not produced or tailed at vein 4, but uniformly curved and only shortly and obtusely dentate, at the extremity of vein 2 a little more produced than at the other veins. The costal margin of the forewing beneath with white transverse striae at the base, as in *hippomene*.

*abyssinica*.

**A. abyssinica** Fldr. (52 d) is the smallest species, only measuring 33—34 mm. from tip to tip of the forewings; the upperside of the hindwing has a narrow red-yellow marginal band, which is usually separated by a black marginal line from the distal margin itself; the subapical band of the forewing is broader than in the other species and yellowish. Kilimandjaro to Abyssinia and Ruwenzori.

### Second Group.

The distal margin of the hindwing forms a distinct projection at vein 4 and has there a distinct tail.

*hippomene*.

**A. hippomene** Hbn. (52 d) differs from the three following species in having the costal margin of the forewing beneath adorned with whitish transverse striae at the base as far as the transverse band; the forewing has on the upperside a sharply defined red-yellow marginal band, which, however, only reaches vein 3, and a short tail at vein 4; the antennal club black beneath. Cape to Abyssinia and Ruwenzori; also in the interior

*madegassorum*.

of the Cameroons. — **madegassorum** Auriv. is the race which occurs on Madagascar, and only differs in having the club of the antenna rust-yellow beneath and the tail of the hindwing longer.

*schaeneia*.

**A. schaeneia** Trim. (52 d) is very similar above to the preceding species, but is a little larger and with a longer tail at vein 4 of the hindwing. The under surface differs in the colouring and markings of the hindwing (cf. the figures) and especially in the cell of the forewing having an eye-spot before the middle and in the costal margin being unicolorous dark brown from the base to the transverse band, without white transverse striation.

*diluta*.

Cape to Brit. East Africa and Uganda. — **diluta** Rothsch. & Jord. differs in having the transverse band of the forewing lighter, in the ♀ whitish, and the orange-yellow marginal band on the upperside of the hindwing much narrower and ornamented with a dark marginal line. Abyssinia.

*borbonica*.

**A. borbonica** Oberth. is even larger than *schaeneia* (length of the forewing about 34 mm.), but otherwise so similar that it is probably scarcely more than a race of this. The orange-yellow marginal band on the upperside of the hindwing has distinct dark transverse streaks at its distal edge, as in *diluta*; the most important difference from *schaeneia* seems to consist in the under surface of the hindwing being ornamented with sharply prominent, irregularly broken, light transverse lines. The larva lives on *Boehmeria* (*Pilea*) *urticaefolia* Spreng.; it is red-violet with red-yellow spines, black at the tips, and has on segments 4—11 a broad whitish, black-spotted lateral line; the first segment has no spines, the second and third three at each side and segments

*mauritiana*.

4—11 in addition a spine in the dorsal line. Madagascar and Bourbon. — **mauritiana** Manders is somewhat

smaller and further differs in having the orange-yellow transverse band of the forewing on both surfaces incised or irregular at the hindmargin of the cell; in the type-form, on the other hand, this band is proximally nearly straight and distally uniformly curved. Mauritius; now very rare.

**A. delius** *Drury* (52 c) differs from the other species in the shape of the wings, the distal margin of the forewing being much more deeply emarginate and the hindwing having two tails, a longer one at vein 4 and a shorter at vein 2. The transverse band of the forewing is red-brown above, light yellow beneath, begins nearer to the base of the costal margin, does not cover the apex of the cell, bends round sharply towards the hindmargin at vein 2 and is more or less extended towards the base in cellules 1 b and 1 a; the upper-side of the hindwing is for the most part red-yellow or red-brown, with blackish base, thick black transverse spot at the end of the cell and dark marginal band, which at least in the ♀ encloses a red-yellow line in cellules 4—6. The under surface, as in the other species, is variegated and the cell of the forewing has near the base a white-ringed eye-spot. Sierra Leone to the Congo. — ♂-ab. **nigrescens** *Suff.* has instead of the red-yellow transverse band of the forewing only a red-yellow hindmarginal spot, which reaches the middle of cellule 2. Togo. — **amauroptera** *E. Sharpe* has the upperside of the hindwing almost uniform black-brown and the transverse band of the forewing chestnut-brown and also in part indistinct. Uganda: Toro.

### 8. Subfamily: Argynnidinae.

The members of this subfamily may be at once known by the structure of the palpus (cf. the synopsis, p. 122). The cell of the forewing is closed and the precostal vein of the hindwing in all the Ethiopian genera arises after the separation of vein 8 from the cell. — The larvae with 4—6 spines on each segment from 2—12, but the head unarmed.

All the species are at least in the male orange to brown-yellow above, with black markings, and on the underside of the hindwing often ornamented with silvery or pearly markings.

The subfamily *Argynnidinae* is comparatively poor in species in the Ethiopian Region. With regard to their geographical distribution the reader is referred to what is said on the subject in vol. I, p. 211.

The four Ethiopian genera may be easily distinguished by the following synopsis.

### Synopsis of the Genera.

- I. Veins 3 and 4 of the forewing from a point or short-stalked.
  - A. Eyes hairy. Vein 10 of the forewing arises before or from the apex of the cell. 1. *Smerina*.
  - B. Eyes naked. Vein 10 of the forewing arises behind the apex of the cell from the stalk of 7+8+9.
    - a) Cell of the hindwing open. The ♂ with large black-grey pilose spot in cellules 5—7 of the hindwing above. 2. *Lachnoptera*.
    - b) Cell of the hindwing closed and veins 3 and 4 stalked. The ♂ without pilose spot. 3. *Atella*.
- II. Veins 3 and 4 of the forewing widely separated. Eyes naked. 4. *Argynnis*.

### 1. Genus: *Smerina* *Hew.*

Forewing narrowly triangular with the apex produced and the distal margin weakly emarginate. Hindwing with the distal margin rounded and almost entire. Head broad with long palpus, of which the second joint is large and broad. The early stages are unknown.

**S. manoro** *Ward* (52 d). Both wings brown-yellow above, darker at the base, with black or blackish markings; the costal margin of the forewing dark, also some streaks in the cell and a large transverse spot, widened towards the costal margin, at the end of the cell of the forewing, the apex of the forewing for a breadth of 8—10 mm. and a common marginal band about 3 mm. in breadth, in the ♂ sharply defined, in the ♀ lighter, proximally diffuse, and enclosing two dark lines; before the marginal band there is usually a row of dark dots or streaks; in the black apex of the forewing 3 round yellowish spots are placed in a triangle. The under surface is red-brown or grey-brown with some fine dark transverse lines and dots and with a thick blackish, nearly straight median line, distally margined with silver-white, and silvery nebulous spots at the anal angle of the hindwing and before the apex and in the cell of the forewing. Madagascar, in the higher wooded districts near Tamatave. One of the greater rarities among the butterflies of Madagascar.

### 2. Genus: *Lachnoptera* *Dbl.*

Wings large and broad, with undulate margins; the apex of the forewing not produced, obtusely rounded; its distal margin nearly straight, only between veins 3 and 6 weakly emarginate. Hindwing with the costal margin short and almost straight, the apex broadly rounded, the distal margin more or less distinctly angled



at vein 4. Vein 11 of the forewing from the apex of the cell; veins 3 and 4 short-stalked or from the same point. Sexes differently marked above and the ♂ with a large pilose spot before the apex of the hindwing. In the ♀ the wings have on the upperside a distinct dark dentate median line, which separates the darker basal half from the lighter distal half; in the ♂ this median line is entirely absent or is only developed between the costal margin and vein 4 of the forewing and the basal part is not darker than the distal. In the distal part of the hindwing there is in both sexes a transverse row of rounded black discal spots and before the distal margin three dentate or strongly undulate black lines, of which the proximal one in the ♂ is often indistinct and the distal occasionally joined to the dark distal margin itself, and on the forewing three such transverse lines, of which in the ♂ the proximal is broken up into free spots or dots and the distal almost fused with the distal margin. On the under surface these markings are light brown to yellow-brown (only in cellules 1 a and 1 b of the forewing blackish) and the discal spots of the hindwing developed into eye-spots; the median line is here distinct in both sexes and on the hindwing distally accompanied by white or silvery spots. The early stages are unknown.

*iole*. **L. iole** *F.* (52 f). ♂: both wings above uniform orange-yellow; the forewing without black markings at the costal margin between the base and the submarginal dots; the under surface with dull, ochre-yellow ground-colour. ♀: wings above in the basal half dull yellow-brown, in the distal half light yellowish, beneath lighter than in the ♂. Sierra Leone to the Congo and Ruwenzori. ♀-ab. **hecataea** *Hew.* differs from the type-form in having the ground-colour of the wings above blackish in the basal half and white in the distal. — ab. *afzelii*. **afzelii** *Auriv.* has the ground-colour beneath darker, inclining to violet, and at least in the distal half of the hindwing with mother-of-pearl gloss. Sierra Leone.

*ayresi*. **L. ayresi** *Trim.* is possibly only the southern and eastern race of *iole*. The hindwing is distinctly angled at the extremity of vein 4 and the pilose spot of the ♂ is smaller than in *iole*. In the ♂ the forewing has above a black dot at the anterior margin of the cell and shortly behind the cell a thick, obliquely placed black transverse streak from the middle of the costal margin to vein 4 and midway between this transverse streak and the submarginal dots is placed another black costal spot, which, however, only reaches vein 6; the proximal black marginal line of the forewing shows a distinct tendency to thickening at veins 4 and 5, occasionally forming a large black spot. The ♀ is unknown to me; according to TRIMEN's description it scarcely differs above from the ♀ of the type-form, but is said to be very light grey-yellow beneath, with bronze-green reflection. Natal to British East Africa. — ♀-ab. **abbotti** *Holl.* has a violet gloss on the under surface. German East Africa.

### 3. Genus: **Atella** *Dbl.*

*Atella* nearly approaches the preceding genus, only differing in the characters given in the synopsis and in the rounded hindwing.

The species are nearly allied and all have the ground-colour above orange-yellow or brown-yellow, with the following black markings: a fine line, usually thickened at the extremities of the veins, at the distal margin itself; two lines before the distal margin, the outer one on the forewing sometimes fused with the distal margin; a row of rounded submarginal dots, five (in 1 b—5) on the forewing and four (in 2, 3, 5 and 6) on the hindwing; a median line composed of streaks or lunules, but usually only present in cellules 4—6 and 8 of the forewing; 5 or 6 discal dots on the forewing, placed at the base of cellules 1 b—6 and finally two transverse streaks at the end and two in the middle of the cell on the forewing. On the under surface these markings are more indistinct and for the most part brown or yellowish; the median line is completely developed and the submarginal dots changed into eye-spots. The larva is armed with spines; the head, however, without spines. Pupa nearly straight with obtusely rounded head and two conical protuberances on each segment of the thorax and the abdomen.

The genus is also widely distributed in the Indo-Australian Region. Cf. vol. I, p. 243, pl. 71 d and vol. IX, p. 470.

*columbina*. **A. columbina** *Cr.* (52 f). Distal margin of the hindwing distinctly angled at vein 4; the black markings of the upper surface more strongly developed than in *phalantha*; the marginal line on the upperside of the forewing continuous; the proximal submarginal line of the forewing usually forms in 4 a long, sharp angle proximad, which nearly reaches the submarginal dot; the submarginal dots on the underside of the hindwing large and black with brown rings; the discal spots of the forewing beneath scarcely noticeable. Sierra Leone to Natal, British East Africa and Uganda. — **microps** *Rothsch. & Jord.* only differs in having the base of the wings above darkened, olive-brown. Somaliland and Abyssinia.

*philiberti*. **A. philiberti** *Joannis* closely approaches the preceding species and, like it, has the hindwing distinctly angled at vein 4. From the other species it differs in having the median line of the upper surface completely developed; this is broken up into spots on the forewing, but on the hindwing it is continuous and borders the darker, olivaceous basal half; on the forewing only the basal third is darkened. Seychelles.

*phalantha*. **A. phalantha** *Drury*. The type-form only occurs in Asia (vol. I, p. 243, 471). — **aethiopica** *Rothsch. & aethiopica*.

*Jord.* (52 f; as *phalanta*) is the African form and differs in having the median line of the upper surface absent except at the costal margin of the forewing and the transverse streaks in the basal half of the hindwing beneath light brown or yellowish instead of blackish as in the type-form. From *columbina* it may be distinguished by having the distal margin of the hindwing rounded, the marginal line interrupted at the interneural folds and consequently broken up into spots and the submarginal dots on the underside of the hindwing more indistinct, with small black pupils. The proximal submarginal line on both wings is composed of lunules. The whole of Africa together with nearly all the islands. Larva black with black and yellow spines and white lateral line; head red-brown above with white triangle on the face; it lives in Madagascar on *Flacourtia ramontchi* and in South Africa on species of willow. Pupa green with black markings and silver spots. — **granti** *Rothsch.* & *granti*. *Jord.* has thicker black markings on the upper surface. Socotra.

**A. madagascariensis** *Mab.* is very similar to the preceding species, but the distal submarginal line and the marginal line of the forewing are united into a black marginal band 1 mm. in breadth and the proximal submarginal line of the forewing is composed of nearly straight streaks; the marginal line of the hindwing is of uniform thickness and quite continuous; both wings have the margins almost entire. Madagascar. *madagascariensis*.

#### 4. Genus: **Argynnis** *F.*

With regard to this well-known genus it is sufficient to refer to the generic synopsis (p. 229) and the detailed description by STICHEL in vol. I, p. 226.

In the Ethiopian Region the *Argynnis* species are confined to the higher mountain districts, where their food-plants (species of *Viola*) grow. The large species *A. hyperbius* only occurs in Abyssinia and is evidently an immigrant from Asia; the other species are small and endemic.

Following the example of FELDER, I formerly divided the species into two genera, *Argynnis* and *Brenthis*, which differ in the position of vein 10 of the forewing. But when we consider that by employing this character such nearly allied species as *thore*, *ino* and *daphne* are separated generically, the first-named being referable to *Brenthis*, the others to *Argynnis* and in addition that at least in *ino* specimens occur in which vein 10 arises beyond the apex of the cell just as in *thore*, we must certainly support Herr STICHEL and reject the division as unnatural. If we place *ino*, *daphne*, *hecate* and others with *aglaia*, *paphia*, *hyperbius* and others in *Argynnis*, but leave *thore* in *Brenthis*, we imply that the first-named species are more nearly allied with *aglaia* and *paphia* than with *thore*, which is undoubtedly incorrect.

With regard to the name *Boloria*, introduced by MOORE and FRUHSTORFER (vol. IX, p. 512) in place of *Brenthis*, I may be permitted to remark that this is a quite unnecessary innovation. FELDER was the first who employed HÜBNER's name *Brenthis* and scientifically established it; hence he was justified in regarding any one of the species enumerated by HÜBNER as type, and by the characters given by him and afterwards utilized by all following authors he selected *thore* as type as long ago as 1861. That other authors have afterwards declared another of the species mentioned by HÜBNER to be the type is consequently altogether without significance. Hence the strictures which FRUHSTORFER (l. c.) passes on the authors who have used *Brenthis* in FELDER's sense are in my opinion entirely uncalled for.

#### First Group.

A large species, with an expanse of 62—90 mm. and the ♀ unlike the ♂, having a white subapical band on the forewing. Vein 10 of the forewing arises free from the anterior margin of the cell and the precostal vein of the hindwing is strongly curved basad.

**A. hyperbius** *L. \** (vol. I, p. 242, pl. 71 c, d) was described from specimens from South Asia and occurs there almost everywhere in mountain districts where *Viola* species grow wild. The form which occurs in Africa and has hitherto only been found on the mountains of Abyssinia, where *Viola abyssinica* is indigenous, differs somewhat from the Indian race and has been described as **neumanni** *Rothsch.* & *Jord.* It differs in both sexes from the type-form in the entire absence of the silvery dot between the two black transverse lines in the cell of the hindwing beneath, in having the ground-colour between the silvery spots on the underside of the hindwing not olivaceous but tawny and in the discal spot in cellule 4 of the hindwing being placed nearer to the distal margin. In the ♀ the white subapical band of the forewing is smaller than in the type-form and the spots of the fringes are yellowish instead of white. *hyperbius*. *neumanni*.

#### Second Group.

Smaller species, with an expanse of only 30—37 mm. Vein 10 of the forewing arises beyond the apex of the cell

\*) Not JOHANSSON, who was only the editor and "respondent", but not the author, of the thesis "Centuria Insectorum".



from the stalk of  $7 + 8 + 9$  or in *baumanni*, according to REBEL and ROGENHOFER, exactly at the end of the cell. In the three species known to me the precostal vein is long and at first straight, then slightly curved basad. All the species are evidently nearly allied and have practically almost the same markings, although the spots are more or less developed and the ground-colour is liable to variation. The wings have the ground-colour above pale yellow—orange-yellow—yellow-red with darkened basal third and transverse rows of black spots; at the distal margin there is a black light-spotted marginal band 1—2 mm. in breadth, formed by the union of the submarginal and marginal lines, then follows a row of 6 rounded submarginal dots and afterwards an irregular row of discal dots, which is sometimes absent on the hindwing, but on the forewing consists of 3 spots near the base of cellules 1 b—3 and of 3 connected spots in cellules 4—6, which form a right angle with the preceding; in addition the forewing has 3 black transverse streaks in the cell, one at the apex of the cell and one at the costal margin between the discal and the submarginal spots, and finally a black spot or dot is placed in the middle of cellule 1 b. The under surface of the forewing is lighter yellow or white-yellow at the apex and the distal margin, but has almost the same ground-colour and black markings as above and in addition some silvery spots before the apex: the hindwing has the under surface much lighter, light yellow to whitish, with numerous silver spots and some rust-brown spots at the anal angle and apex and in the cell: in the latter there is in all the species a round, black-ringed silver spot and in addition to this a black transverse streak: the discal spots are distinct and the submarginal dots are often ring-shaped with light centres.

*smaragdifer.*

**A. smaragdifer** *Btlr.* (52 e) is somewhat larger than the other species of this group and also differs very considerably from them in other respects. The distal margin of the forewing quite straight; the black spots on the upper surface large and angular and the hindwing above both with discal spots and also with a thick spot at the apex of the cell and a transverse streak in the cell; the light spots of the marginal band are larger than in the other species; the submarginal dots in cellules 5 and 6 of the forewing beneath are light-pupilled and placed in a rust-brown spot, which is bordered on each side by 2 or 3 silvery spots; the under surface of the hindwing has about 20 sharply defined silver spots, of which the largest is placed in the middle and extends from the black transverse streak of the cell to the black discal dot in cellule 4 and is divided by the unspotted transverse vein of the cell into two parts of almost equal size; the silvery spots before the distal margin are not distally bordered with black. Nyassaland, on the mountains.

*excelsior.*

**A. excelsior** *Btlr.* (52 e) differs from *smaragdifer* in the curved distal margin of the forewing, the small, light spots in the marginal band, the much smaller black markings of the upper surface, the more reddish ground-colour of the upperside, the lighter under surface of the hindwing with the silvery spots not sharply defined, and the black streak on the discocellular of the hindwing beneath; the submarginal silver spots of the hindwing are separated by fine black streaks from the light yellow distal margin. First discovered on Ruwenzori at an elevation of 5600—9000 ft. and afterwards found by Lieutenant A. SCHULTZE on the highlands near Bamenda in the Cameroons; also occurs on Lake Tanganyika at an altitude of 1900—2100 m.

*hanningtoni.*

**A. hanningtoni** *Elwes* (52 e) is very closely allied to *excelsior*, only differing in having the ground-colour of the upper surface pale yellow with larger black spots and in the silvery submarginal spots on the underside of the hindwing having no distal bordering. Kilimandjaro; British East Africa: Escarpment at 6500—9000 ft.; Uganda; Ruanda.

*baumanni.*

**A. baumanni** *Rebel & Rogenh.* is unknown to me, but seems to be the same species as *hanningtoni*. At least the description fits well to this species except that the ground-colour of the upper surface is described as "rather light and bright red-yellow". Taken on the mountain of Missasiya Mwesi in the Imbo-Urundi region, German East Africa, at an elevation of 2500 m.

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# Alphabetical List

with reference to the original descriptions of the forms of the African *Nymphalidae*.

\* signifies that the form is also figured at the place cited.

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 nivaria Euryphene *Ward* Ent. Monthl. Mag. 8, p. 82.  
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 plautilla Euryphura *Hew.* Exot. Butt. Euryphene, pl. 3. \*  
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 rauana *Precis* *Smith* Nov. Zool. 5, p. 352.  
 ravola Euph. *Hew.* Exot. Butt. Romaleosoma, pl. 4. \*  
 rectans Charax. *Rothsch. & Jord.* Nov. Zool. 10, p. 540.  
 reducta Euph. *Bartel* Nov. Zool. 12, p. 141.  
 regalis Charax. *Rothsch.* Nov. Zool. 7, p. 486.  
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 reuteri Cymoth. *Strand* Wien. Ent. Zeit. 29, p. 32.  
 rezia Euph. *Hew.* Exot. Butt. Romaleosoma, pl. 4. \*  
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 rubrocostata Euryphene *Auriv.* Oefvers. Vet. Akad. Förhl.  
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 ruhamia Pseudacr. *Hew.* Ent. Monthl. Mag. 9, p. 84.  
 rumia Kallima *Doubl. & Westw.* Gen. Diurn. Lep. p. 325. \*  
 ruspina Euph. *Hew.* Exot. Butt. Romaleosoma, pl. 2. \*  
 saclava Neptis *Bdv.* Faune Madag., p. 49.  
 salmacis Hypol. *Drury* Ill. Exot. Ins. 2, p. 14. \*  
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 semire Pseudacr. *Cr.* Pap. Exot. 3, p. 3. \*  
 semitypica *Precis* *Auriv.* Rhop. Aethiop., p. 140.  
 seneca Cymoth. *Kirb.* Ann. Mag. Nat. Hist. (6) 3, p. 249.  
 senegalensis Euryphene *H.-Schäff.* Aussereur. Schmett. Tagl.,  
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 sesamus *Precis* *Trim.* Trans. Ent. Soc. Lond. 1883, p. 347.  
 severini Euryphene *Auriv.* Oefvers. Vet. Akad. Förhl. 54: 5,  
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 sextilla Neptis *Mab.* Le Natural. 2, p. 99.  
 sibyllina Pseudath. *Stgr.* Iris 3, pl. 3. \*  
 sikorana Catuna *Rogenh.* Verh. Zool. Bot. Ges. Wien 39,  
 Sitzb. p. 76.  
 simia *Precis* *Wallengr.* Rhop. Caffr., p. 26.  
 simplex Diestog. *Stgr.* Iris 4, p. 97.  
 simulator Pseudacr. *Bttr.* Cist. Ent. 1, p. 125.  
 sinuata *Precis* *Plötz* Stett. Ent. Zeit. 41, p. 477.  
 sirene Euptera *Stgr.* Iris 4, p. 100. \*  
 smaragdalis Charax. *Bttr.* Proc. Zool. Soc. Lond. 1865, p. 630. \*  
 smaragdifera Argynnis *Bttr.* Proc. Zool. Soc. Lond. 1895,  
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 somaliensis Charax. *Rothsch.* Nov. Zool. 7, p. 432.  
 sophia *Precis* *F.* Ent. Syst. 3: 1, p. 248.  
 sophus Euryphene *F.* Ent. Syst. 3: 1, p. 46.  
 spatiosa Euph. *Mab.* Bull. Soc. Zool. Fr. 1, p. 278.  
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 striata Pseudacr. *Bttr.* Cist. Ent. 1, p. 215.  
 strigata Neptis *Auriv.* Ent. Tidskr. 15, p. 284. \*  
 stygia *Precis* *Auriv.* Ent. Tidskr. 15, p. 275.  
 subbipupillata *Precis* *Strand* Archiv f. Naturg. 77: 1: 4,  
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 subepiclelia *Precis* *Strand* Int. Ent. Zeitschr. 4, p. 227.  
 sublineata Cyrestis *Lathy* Trans. Ent. Soc. Lond. 1901, p. 25.  
 sublurida Cymoth. *Fruhst.* Stett. Ent. Zeit. 64, p. 359.  
 sublentyrus Euryphene *Strand* Fauna Exot. 1, p. 37.  
 subtriocellata *Precis* *Strand* Archiv f. Naturg. 77: 1: 4, p. 90.  
 suffusa *Precis* *Rothsch. & Jord.* Nov. Zool. 10, p. 513.  
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 superbus Charax. *A. Schultze* Soc. Ent. 23, p. 172.  
 symphona Euryphene *Baker* Ann. Mag. Nat. Hist. (8) 2,  
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*tarquinia* Pseudacr. *Trim.* Trans. Ent. Soc. Lond. 1868, p. 79. \*  
*taveta* Precis *Rogenh.* Ann. Mus. Wien 6, p. 460. \*  
*tavetensis* Charax. *Rothsch.* Nov. Zool. 1, p. 535.  
*temora* Salam. *Ftldr.* Reise Novara Lep., p. 404.  
*tentyris* Euryphene *Hew.* Exot. Butt. Euryphene, pl. 5. \*  
*terea* Precis *Drury* Ill. Exot. Ins. 2, p. 32.  
*tereoides* Precis *Bttr.* Ann. Mag. Nat. Hist. (7) 8, p. 211.  
*terra* Pseudacr. *Neave* Nov. Zool. 11, p. 332.  
*tessmanni* Euryphene *Grünb.* Sitzber. Ges. Naturf. Fr. Berl. 1910, p. 471.  
*thaulma* Euryphaedra *Stgr.* Iris 4, p. 102.  
*themis* Euph. *Hbn.* Exot. Schm. 1, pl. 60. \*  
*theobene* Cymoth. *Dbl. & Hew.* Gen. Diurn. Lep., p. 288. \*  
*theocranta* Cymoth. *Karsch* Ent. Nachr. 20, p. 209. \*  
*theodosia* Cymoth. *Stgr.* Stett. Ent. Zeit. 50, p. 416.  
*theognis* Euryphene *Hew.* Exot. Butt. Euryphene pl. 1. \*  
*theophane* Aterica *Hopff.* Sitzb. Akad. Wiss. Berl. 1855, p. 641.  
*theorini* Pseudacr. *Auriv.* Ent. Tidskr. 12, p. 207.  
*thomasius* Charax. *Stgr.* Exot. Schm. 1, p. 169.  
*thomensis* Hypol. *Auriv.* Ann. Mus. Genov. 44, p. 510.  
*thysi* Charax. *Capronn.* Ann. Soc. Ent. Belg. 33, Bull., p. 125.  
*tia* Euryphene *Suff.* Iris 17, p. 111.  
*tiberius* Euxanthe *Smith* Ann. Mag. Nat. Hist. (6) 3, p. 129.  
*tiridates* Charax. *Cr.* Pap. Exot. 2, p. 100. \*  
*tirikensis* Pseudacr. *Neave* Nov. Zool. 11, p. 332. \*  
*togoensis* Euryphura *Suff.* Iris 17, p. 114.  
*togoensis* Pseudacraea, *Bartcl* Nov. Zool. 12, p. 137.  
*touhilimasa* Precis *Guillot* Ann. Soc. Ent. Fr. 61, Bull., p. 148.  
*trajanus* Euxanthe *Ward* Ent. Monthl. Mag. 8, p. 36.  
*trigonophora* Neptis *Bttr.* Ann. Mag. Nat. Hist. (5) 2, p. 177.  
*trimeni* Crenis *Auriv.* Rhop. Aethiop. 161.  
*trimeni* Cymoth. *Auriv.* Seitz Macrolep. 13, p. 152. \*  
*trimeni* Precis *Bttr.* Proc. Zool. Soc. 1893, p. 651. \*  
*trimeni* Pseudacr. *Bttr.* Ent. Monthl. Mag. 11, p. 57.  
*triocellata* Precis *Strand* Int. Ent. Zeitschr. 4, p. 227.  
*tugela* Precis *Trim.* Trans. Ent. Soc. Lond. 1879, p. 334.  
*tukuoa* Precis *Waltengr.* Rhop. Caffr., p. 25.  
  
*uganda* Euph. *Auriv.* Ent. Nachr. 21, p. 380.  
*umbrina* Crenis *Karsch* Ent. Nachr. 18, p. 114.  
*umbrina* Diestog. *Auriv.* Ent. Tidskr. 22, p. 116.  
*unopunctata* Baker Ann. Mag. Nat. Hist. (8) 2, p. 476.  
*urungensis* Neptis *Strand* Mit. Zool. Mus. Berl. 5, p. 287.  
*usagarae* Pseudacr. *Stgr.* Iris 3, pl. 3. \*  
*usambara* Hypol. *Ward* Ent. Monthl. Mag. 9, p. 148.  
  
*ussheri* Palla *Bttr.* Trans. Ent. Soc. Lond. 1870, p. 124.  
  
*varanes* Charax. *Cr.* Pap. Exot. 2, p. 100. \*  
*variegata* Euph. *Auriv.* Seitz Macrolep. 13, p. 184. \*  
*velleda* Neptidopsis *Mab.* Ann. Soc. Ent. Fr. (6) 10, p. 19.  
*velox* Charax. *Grant* Bull. Liverp. Mus. 2, p. 10.  
*veronica* Diestog. *Cr.* Pap. Exot. 4, p. 73.  
*vetula* Charax. *Rothsch.* Nov. Zool. 7, p. 488.  
*vetusta* Euph. *Bttr.* Lep. Exot., p. 82. \*  
*viola* Charax. *Bttr.* Proc. Zool. Soc. Lond. 1865, p. 627. \*  
*violacea* Charax. *Rothsch.* Nov. Zool. 7, p. 485.  
*violacea* Euph. *Bttr.* Proc. Zool. Soc. 1888, p. 91.  
*violetta* Charax. *Smith* Ent. Monthl. Mag. 21, p. 247.  
*violinitens* Charax. *Cr.* Trans. Ent. Soc. Lond. 1890, p. 554. \*  
*vireseens* Salam. *Suff.* Iris 17, p. 109.  
*viridata* Precis *Strand* Int. Ent. Zeitschr. 4, p. 227.  
*viridicoerulea* Euph. *Bartcl* Nov. Zool. 12, p. 139.  
*viridinota* Euph. *Bttr.* Lep. Exot., p. 82. \*  
*viridis* Euph. *Suff.* Iris 17, p. 111.  
*virilis* Charax. *Rothsch.* Nov. Zool. 7, p. 487.  
*virilis* Precis *Strand* Archiv f. Naturg. 77:1:4, p. 90.  
*vologeses* Charax. *Mab.* Bull. Soc. Zool. Fr. 1, p. 280.  
*vosseleriana* Precis *Strand* Int. Ent. Zeitschr. 4, p. 227.  
*vulgaris* Byblia *Stgr.* Exot. Schm. 1, p. 106.  
  
*wahlbergi* Hypol. *Waltengr.* Rhop. Caffr., p. 27.  
*wakefieldi* Euxanthe *Ward* Ent. Monthl. Mag. 10, p. 152.  
*walensensis* Pseudacr. *E. Sharpe* Proc. Zool. Soc. Lond. 1896, p. 532.  
*warburgi* Pseudacr. *Auriv.* Ent. Tidskr. 13, p. 200.  
*wardi* Euph. *Druce* Cist. Ent. 1, p. 286.  
*w-brunnea* Charax. *Baker* Ann. Mag. Nat. Hist. (8) 2, p. 478.  
*westermanni* Precis *Westw.* Ent. Monthl. Mag. 6, p. 278.  
*weymeri* Cymoth. *Suff.* Iris 17, p. 119.  
*wilwerthi* Euryphene *Auriv.* Ent. Tidskr. 19, p. 177.  
*wissmanni* Euph. *Niepelt* Ent. Zeitschr. 20, p. 25.  
*wintgensi* Precis *Strand* Iris 22, p. 107.  
*woodwardi* Neptis *E. Sharpe* Ann. Mag. Nat. Hist. (7) 3, p. 243.  
  
*xiphares* Charax. *Cr.* Pap. Exot. 4, p. 171. \*  
*xypete* Euph. *Hew.* Exot. Butt. Romaleosoma, pl. 2. \*  
  
*zaddaehi* Euph. *Dcw.* Nov. Acta Acad. Nat. Cur. 41:2, p. 199.  
*zampa* Euph. *Westw.* Gen. Diurn. Lep., p. 284.  
*zeliea* Charax. *Bttr.* Ent. Monthl. Mag. 6, p. 28.  
*zingha* Charax. *Cr.* Pap. Exot. 4, p. 53. \*  
*zonara* Euryphene *Bttr.* Proc. Zool. Soc. Lond. 1871, p. 81.  
*zoolina* Charax. *Dbl. & Hew.* Gen. Diurn. Lep. pl. 53. \*

## 6. Family : *Acraeidae*.

This section would perhaps be better regarded as only a subfamily of the *Nymphalids*, as in the other parts of this work; but in order not to conflict with most other works with regard to this group I have here cited it as a separate family.

The *Acraeids* only differ from the *Nymphalids* in having the cells of both wings completely closed and in the inner margin of the hindwing having no groove or hollow for the reception of the abdomen. The hindwing is consequently spread out flat at the inner margin and scaled and marked in cellules 1 a—1 c as elsewhere.

The forewing is elongate with the distal margin curved or straight, the apex rounded and the costal margin straight beyond the middle. The hindwing has the costal margin straight and the distal margin almost uniformly curved. Distal margin of both wings entire or slightly undulate with short fringes. Abdomen long and slender, almost cylindrical or thickened towards the tip and at the base more or less compressed. Antenna moderately long with distinctly defined club. Palpus with long middle joint and very short, knob-like terminal joint, thinly scaled and clothed with single stiff bristly hairs. The hindwing has the precostal vein distinctly curved towards the base. The forelegs are aborted quite as in the *Nymphalids* and without claws, in the ♂ thin and longhaired, in the ♀ with appressed scales, at the end somewhat thickened and beneath with short spines. The claws of the other legs are well developed and usually angled in the middle beneath; in the ♂♂ they are nearly always of unequal size or otherwise dissimilar.

The larvae are gregarious and are clothed with branched spines. The spines are arranged in a very characteristic manner, hence the larvae of *Acraea* can be at once distinguished from all the *Nymphalid* larvae known to me. Segments 4—11 have each 6 spines of almost equal length, placed in a straight transverse line; the first segment has only two dorsal spines and the second and third in addition to the dorsal spines a lateral spine at each side, which, however, is placed quite at the anterior margin of the segment or almost in the connecting skin between the segments; segments 12 and 13 each with two spines.

The pupae are elongate, almost cylindrical, neither ventricose nor strongly convex dorsally; the first segments of the abdomen have often each on the upperside two small protuberances or two long spines bent at the tip; the head also has occasionally ear- or horn-shaped appendages. They are nearly always light-coloured with sharply prominent black markings.

The *Acraeids* have a slow, gentle flight and are gregarious also as butterflies. They eject from the thorax a yellowish fluid, which has an unpleasant smell and apparently protects them against most enemies. Even the dead and dried specimens in collections are not or but little attacked by destructive insects.

The *Acraeids* occur everywhere in the tropics, but in the Ethiopian Region are much commoner and more numerous than in the other regions.

The African species belong to three genera, the third of which is very variable.

### Synopsis of the Genera.

- A. Upper discocellular of the forewing absent or very short and placed almost vertically to the anterior margin of the cell. Hence vein 6 of the forewing arises from the apex of the cell or near to it and is widely separated from vein 5.
  - a) Vein 11 of the forewing arises beyond the cell from the stalk of 7—10 or occasionally just from the apex of the cell. The cell of the hindwing is short, not reaching the middle of the wing. Palpus black or blackish with a whitish longitudinal line.
    1. *Planema*.
  - b) Vein 11 of the forewing arises before the end of the cell. The cell of the hindwing is long, reaching the middle of the wing. Palpus light yellowish or whitish and only the short terminal joint blackish.
    2. *Acraea*.
- B. Upper discocellular of the forewing very long and placed very obliquely, so that it looks like a continuation of the anterior margin of the cell. Veins 5 and 6 arise from the same point (apparently the apex of the cell) and the stalk of veins 7—10 consequently appears to arise far before the apex of the cell.
  3. *Pardopsis*.

#### 1. Genus: *Planema* Doubl. & Hew.

This genus embraces the largest of the African *Acraeids* and indeed the largest of all known *Acraeids*. In the scheme of markings the *Planema* species nearly agree with the first species of the following genus. The



forewing is always entirely without black dots; but the hindwing has always well developed basal dots and usually also discal dots, at least in cellules 1 b, 1 c and 2; these are, however, closely approximated to the base on account of the shortness of the cell; submarginal dots, on the other hand, are always absent. At the distal margin there are long, strong black streaks on the folds between the veins; but light marginal spots are entirely absent on both surfaces.

Some authors, who only concerned themselves with the colour and markings, have described several species of the genus *Acraea* as *Planema*. But if we refer *Acraea alciope*, *jodutta* and others to *Planema* it becomes quite impossible to draw a sharp dividing-line between *Planema* and *Acraea* and the two genera must be united, as the species just mentioned exactly agree in all important structural respects with the other *Acraea* and cannot possibly be separated from them generically. But if we take into consideration the characters cited above in the synopsis we shall find that there is a good demarcation between true *Planema* and *Acraea* and that this has also found expression in the structure of the pupae, which have two long spines on the back of each of the first abdominal segments.

The genus *Planema* only occurs in the Ethiopian Region and is especially well represented in West Africa. The Planemas are forest butterflies and are consequently wanting in the unwooded steppe-districts and also in the Madagascar subregion.

The mimetic relations between *Planema* and *Pseudacraea* are very highly developed, as has been already shown above, p. 193—196. Since I worked out the *Pseudacraeas*, a *Pseudacraea terra* has quite recently been bred from an egg laid by a *Ps. obscura* ♀, through the labours of Dr. CARPENTER. Hence it has become very probable that the forms most nearly allied to *Ps. eurytus* L. only constitute one species, which would be remarkable for the fact that it employs several quite different species of *Planema* as model and has consequently become polychromatic.

The sexes are more or less dissimilar. As a rule the transverse band or the subapical band of the forewing is in the ♂ yellow to red-yellow, in the ♀ white or whitish and broader than in the ♂; so also the median band of the hindwing is in the ♀♀ broader and lighter than in the ♂♂. The abdomen is marked and coloured almost exactly alike in both sexes; above blackish with yellow hindmargin to the segments and with two rounded light spots on each segment, beneath almost unicolorous yellowish. Only in the last few species is the abdomen lighter dorsally in the ♂ than in the ♀, as in many *Acraeids*.

The species are nearly allied and form only two natural groups.

### First Group.

In the species of this group the forewing has beneath at the costal margin in cellule 12 close to the base two quadrate black spots, which are only separated by the ground-colour. One of these spots is placed quite at the base. The upperside of the forewing has usually only a light transverse band, extending from the costal to the posterior margin or only indicated at the latter; occasionally this band is directed towards the distal margin and broadly separated from the small and indistinctly defined hindmarginal spot. Thus when a separate hindmarginal spot is present in this group it is not sharply defined and does not extend beyond vein 2.

*P. vestalis* is distinguished from all the other species by the transverse band on the upperside of the forewing, otherwise so sharply conspicuous, being entirely absent or only in its posterior part (in cellules 1 a—2) distinct and light grey-yellow; cellule 1 a is nearly always yellowish to beyond the middle; the hindwing above is light brown-yellow at least to the middle, but beneath only yellow-brown at the base as far as the apex of the cell. In the type-form *vestalis* Fldr. (58 e) the upperside of the forewing is unicolorous blackish to the base except for a yellow stripe at the hindmargin and the more or less distinct transverse band and the hindwing above has a black marginal band 7—9 mm. in breadth, sharply defined proximally, and beneath a usually very distinct whitish transverse band behind the basal part. Sierra Leone to the Niger.

*stavelia*. — In *stavelia* Suff. (59 a) the basal part of the forewing above is more or less broadly suffused with light yellow and the yellow basal area on the upperside of the hindwing is not sharply defined distally and sends out yellowish rays nearly to the distal margin; on the under surface of the hindwing the whitish median band is absent or indistinct. Cameroons to the Congo.

The three following species are nearly allied and are characterized by the light transverse band of the forewing touching the apex of the cell or partly covering it and completely filling up the base of cellule 3 at least in the ♂. The transverse band on the forewing above is in the ♂ narrow, 4—7 mm. in breadth, nearly straight, placed more or less vertically to the hindmargin and brown-yellow to red-yellow, in the ♀ always white, broader and more obliquely placed. In the ♀♀ the hindwing has a white median band or is at least somewhat lighter in the middle. The ♀♀ are considerably larger than the ♂♂.

*macaria*. *P. macaria* F. (57). The spots of the transverse band of the forewing in cellules 1 b and 2 are deeply incised distally or occasionally quite cleft; the hindwing above at the base as far as the apex of the cell dark brown to blackish, then with a distinct light yellowish (♂) or white (♀) median band. In the ♂ the upperside of the forewing is nearly black in the basal part as far as the transverse band; hence the dark yellow transverse band, which is about 7 mm. in breadth, is sharply defined basally; it forms in the apex of the cell an irregular spot, which usually encloses a rounded spot of the ground-colour. In the ♀ the white transverse band of the forewing completely fills up the base of cellule 3 and occasionally also forms 1 or 2 spots in the cell; it may be best distinguished from the ♀



of the following species by having the white median band of the hindwing very distinct, rectilinear and very sharply defined against the dark basal area. Sierra Leone.

**P. macarioides** differs in both sexes from *macaria* in having the hindwing above dirty yellow-brown to beyond the middle without a distinct boundary-line between the somewhat darker basal part and the median band. The transverse band of the forewing in the ♂ is somewhat lighter and narrower than in the ♂ of *macaria*. — **macarioides** Auriv. (= *rabuma* Suff.) (57 f, 58 e and 58 f, as *umbra* ♀) is larger and has in the ♂ *macarioides*. the basal part of the forewing at least in the cell blackish; the dark distal part of the hindwing above is broader and more distinctly defined. Cameroons. — **hewitsoni** Auriv. is smaller and differs in the male in having the base *hewitsoni*. of the forewing above light chestnut-brown as far as the transverse band; the band either immediately adjoins the brown colour or is separated from it by blackish spots; the female of this form is unknown to me. Ashanti.

**P. alcinoe** differs from the two preceding species in having spots 1 b and 2 of the transverse band of the forewing distally rounded or cut off transversely, occasionally in the ♀ with a narrow fissure between them; the transverse band of the forewing covers the extreme tip of the lower angle of the cell and also in the ♀ usually the base of cellule 3; in the ♂ the basal part of cellules 1 a and 1 b of the forewing above is brown-yellow and this colour shades into the transverse band without any dividing-line; in the ♀ the median band of the hindwing is white and sharply defined. — **alcinoe** Fldr. (= *godmani* Btlr.) (57 f). The dark *alcinoe*. marginal band on the upperside of the hindwing is narrower, about 6 mm. in breadth, and less sharply defined proximally; in the ♂ the cell of the forewing is entirely or for the most part yellow-brown. Sierra Leone to Gold Coast. — **camerunica** Auriv. (= *salvini* Btlr.) (58 e, f) has the dark marginal band on the upperside of *camerunica*. the hindwing in both sexes broader, 9—11 mm. in breadth, and more sharply defined proximally; in the ♂ the cell of the forewing above is entirely or for the most part black. — Larva unicolorous dark red with black spines and black head. Pupa light-coloured with black markings and on the upperside of the abdomen on each segment from 2—5 with a pair of very long, slender, black spines with yellow-red base and the tips curved into hooks; those of the second segment are longer than the rest and directed forwards, those of the fifth segment the shortest; the head with two divaricating horns. Sjöstedt bred this form in numbers in the Cameroons and thus the identity of the sexes at least here has been definitely established; the specimens show only quite unimportant variations *inter se*. Niger to the southern Congo region.

**P. umbra** Drury (58 f, called ♂ but certainly a ♀) is a species not yet quite accurately known, which *umbra*. closely approximates to the preceding. It was described by DRURY from a ♀ from Sierra Leone, in which the basal part of the forewing is dark yellow-brown and the transverse band is entirely absent; also the basal part of the hindwing is dark brown-yellow to beyond the middle with the usual black dots at the base. The ♀ here figured as “♂” thus agrees very exactly with DRURY’s figure and description. Another ♀ form, **fasciata** *fasciata*. *ab. nov.*, which occurs in the Cameroons, differs in having the base of both wings still darker smoky brown, whilst the forewing bears a white transverse band, very narrow and almost broken up into spots; on the upperside this transverse band only occurs in cellules 2—6, is only about 2 mm. in breadth, forms in 2 and in 3 two free or almost free triangular spots and is placed far beyond the apex of the cell, so that the base of cellules 3—6 is broadly black; thus this ♀ differs entirely from those of the preceding species. A specimen of this form was bred by Professor Sjöstedt; the larva was entirely light red, somewhat inclining to violet, with black spines; the pupa is whitish with black markings and on the back of the abdomen (on segments 3—5) armed with three pairs of long, thick spines, hooked at the tips; these spines are yellow-red at the base and the two last are longer than the rest; the head bears two long, divaricating horns, distally armed with a small tooth. — A form very similar to *P. alcinoe* is usually regarded as the ♂ of *umbra*, but differs in its larger size, the narrower or indistinct transverse band of the forewing and the narrower dark marginal band on the upperside of the hindwing; as the transverse band of the forewing touches the apex of the cell, fills up the base of cellule 3 and has undivided spots in cellules 1 b and 2, it seems improbable that this ♂ belongs to a ♀ which differs in all these characters.

All the following species have a transverse band on the forewing, which is placed beyond the apex of the cell and in both sexes leaves the base of cellule 3 free. Occasionally the transverse band touches the cell and entirely or almost entirely fills up the base of cellule 3; but in this case the band is very broad and reaches the distal margin or the hinder angle, which never occurs in any of the previous species.

a) The basal part of the hindwing beneath red to red-brown or black-brown, much darker than the light median band, the division between the two sharp and almost rectilinear. The discal dots are placed at the distal margin of the basal part.

**P. montana** Btlr. (58 d) ♂: forewing above blackish with a narrow orange-yellow transverse band only about *montana*. 5—6 mm. in breadth, which is proximally incised especially in cellule 3, reaches vein 2 and is accompanied by a usually free spot in cellule 1 b; the hindwing above at the base narrowly black-brown, then with broad orange-yellow median band and sharply defined blackish marginal band about 6 mm. in breadth; the under surface only differs in the somewhat paler ground-colour and the sharply defined red-brown basal part of the hindwing. The ♀ is larger with white transverse band, 8—10 mm. in breadth, on the forewing, which, as in the ♂, is deeply incised



proximally both in cellule 3 and at vein 2, and with a white median band on the hindwing, 14—15 mm. in breadth; the marginal band of the hindwing is sharply defined, as in the ♂, and has thick black streaks on the interneural folds. Nyassaland to British East Africa. ♀-ab. **meruana** Rogenh. Transverse band of the hindwing smoky yellowish. Meru Mountain. ab. **nicega** Suff. has the transverse band of the forewing in the ♂ only 2.5—3 mm. in breadth and the median band of the hindwing in the ♀ light yellow instead of white. Nyassaland.

*aganice*. **P. aganice** Hew. (58 d) nearly approaches the preceding species, but has a narrower transverse band on the forewing and especially a much narrower median band on the hindwing; these are in the ♂ white-yellow or white, in the ♀ white; the transverse band of the forewing is in the ♂ often almost broken up into spots and the spot in cellule 1 b very small or absent; the ground-colour in fresh specimens is almost black and the sharply defined marginal band of the hindwing in both sexes is 9—11 mm. in breadth; the base of the hindwing is nearly black above, dark brown beneath; thus the sexes differ but little from one another. — Larva whitish green with long yellowish spines, yellow-brown head, and blue dots dorsally and laterally. Pupa whitish green with four pairs of long light red dorsal spines as in *camerunica* and small divaricating horns on the head. This species is the only endemic *Planema* in South Africa and is distributed from Kaffirland to Zambesi; in East Africa it is represented by *P. montana*, which is probably only a race of the same species.

*scalivittata*. **P. scalivittata** Btlr. (58 d) is very similar to *aganice*, only differing in the narrow white transverse band of the forewing consisting of two broadly separated parts; one part is placed at the middle of the costal margin and is composed of 5 small spots in cellules 4—6, 10 and 11; the other part only consists of two spots in cellules 2 and 3, placed vertically to the hindmargin and only 2—4 mm. from the distal margin; the two divisions of the transverse band are thus about 3 mm. apart at vein 4. Nyassaland.

*leopoldina*. **P. leopoldina** Auriv. (59 c) agrees with the three last-named species in the transverse band of the forewing in the ♂ not reaching the hindmargin, but differs in its being 6—7 mm. in breadth and quite continuous and at veins 2 and 3 almost reaching the distal margin; the transverse band is light orange-yellow and the spots in cellules 2 and 3 are broadly conical, distally somewhat emarginate and basally rounded; the ground-colour of the upper surface is blackish and the median band of the hindwing is about 10 mm. broad in the middle, proximally rectilinear, distally somewhat excurved, its colour white-yellow above but whitish beneath; the dark marginal band is about 7 mm. in breadth and sharply defined. The ♀ is not known to me. Congo region, near Leopoldville.

*macrosticha*. **P. macrosticha** Baker is unknown to me, but according to information obligingly furnished by Dr. JORDAN it is similar to *P. leopoldina*. The original description runs: "♂: Both wings blackish brown, yellowish fawn-colour. Primaries with basal area black to end of cell, with a confluent black spot projecting forwards in the angle of veins 3 and 4; a broad postmedian band of yellowish fawn-colour from costa to termen below vein 3, but not reaching quite into the tornus, i. e. not below vein 1 a; apical area blackish brown to below vein 3; secondaries sooty brown for a restricted basal area, not to the end of the cell; postmedian area very broadly yellowish pale fawn-colour right up to the tornus, invaded by the black veins and also by fine black internervular lines; termen broadly blackish brown at the apex, tapering down very finely to the tornus. Underside: secondaries with base Indian-red, with two or three basal small spots; a median series of four, an irregular curved series of eight spots, those between veins 5 and 6 and 6 and 7 shifted outwards; postmedian band whitish, not half the width of the yellowish band above, rest of area exceedingly broadly brownish grey. Expanse 80 mm." Congo: Makala.

**P. quadricolor** may be easily known by having the basal half of the forewing above bright chestnut-brown and separated from the bright orange-yellow transverse band by an irregularly interrupted line of the black ground-colour. The transverse band reaches to the hindmargin or at least to vein 1 and at vein 2 almost to the distal margin. The hindwing has a sharply defined, narrow (4—6 mm. in breadth) white or light yellow median band. The apex of the forewing and the marginal band of the hindwing (8—10 mm. in breadth) are almost pure black. — **quadricolor** Rogenh. (58 c). The orange-yellow transverse band of the forewing is about 4 mm. in breadth in cellule 3 and leaves a considerable part of the base of this cellule free. The median band of the hindwing in both sexes white. German East Africa. — **leptis** Jord. (59 d). The transverse band of the forewing in cellule 3 only 2 mm. in breadth, posteriorly indistinct or broken up into spots; median band of the hindwing white. Brit. East Africa: Nairobi. — **latifasciata** E. Sharpe (58 d). The transverse band of the forewing in cellule 3 6—8 mm. in breadth, only leaving a very small part of the base of the cellule free; the proximal black boundary of the transverse band is very narrow and the median band of the hindwing above is light yellow in the ♂, white in the ♀. Ruwenzori and Uganda as far as Mt. Elgon. — **itumbana** Jord. The transverse band of the forewing is even broader than in *latifasciata*; in the ♂ about 9 mm. in breadth; the median band of the hindwing white. German East Africa: Itumba.

*adrasta*. **P. adrasta** Weym. (= haydni Suff.) (57 f). The wings are blackish above and have on the forewing a transverse band about 10 mm. in breadth, which is light ochre-yellow in the ♂, white in the ♀ and is almost straight on its proximal side from the costal margin to vein 2 and occasionally terminates at vein 2; on its distal edge the band is incised in cellules 2 and 3 and at veins 2 and 3 reaches the distal margin. The hind-



wing has a sharply defined, very broad (12—13 mm.) median band, which proximally reaches the commencement of veins 2 and 5 and in the ♂ is light yellow above, white beneath, in the ♀ white on both surfaces; the dark marginal band is about 6 mm. in breadth and sharply defined; the dark streaks of the folds stand out but little in the band. The species is somewhat smaller than those which follow and is characterized especially by the broadly rounded forewing and the small basal area of the hindwing, which is black-brown above, red-brown to reddish beneath. German East Africa: Daressalaam to Usambara. — *pancalis* Jord. has the transverse *pancalis*. band of the forewing and the median band of the hindwing still broader and the latter is continuous as far as the hindmargin. Tanganyika.

**P. formosa** Btlr. (59 b) is a little known species very similar to the following; it differs from it in having the transverse band of the forewing narrowed towards the costal margin and with the distal side angled at vein 4, while the white median band of the hindwing is narrower; transverse band of the forewing orange-yellow in the ♂, white in the ♀. Cameroons to the Congo.

**P. poggei** Dew. (58 d). The sexes are similarly coloured and marked; the ground-colour of the upper *poggei*. surface is nearly black; the transverse band of the forewing is light orange-yellow, 10—15 mm. in breadth, on the distal side more or less convex, towards the base out off obliquely so that its proximal boundary-line is placed almost vertically to the costal margin; its spot in cellule 2 is obliquely cut off and almost reaches the base of vein 3; in the base of cellule 3 a small rounded black spot; the transverse band reaches to the hindmargin and in cellules 1 a—2 usually also to the distal margin; the median band of the hindwing is white, sharply defined and 8—10 mm. in breadth; the sharply prominent black marginal band is consequently 6—10 mm. in breadth; the basal area of the hindwing beneath is deep red-brown. Angola to Lake Kivu. — *nelsoni* Sm. *nelsoni*. only differs in having the transverse band of the forewing posteriorly (in cellules 1 a and 1 b) narrowed and irregularly incised. Congo region to Uganda.

**P. macarista** E. Sharpe (59 b, d). The ♂ is similar to that of *poggei*, but the transverse band of the *macarista*. forewing is of almost uniform breadth, narrower and placed more vertically to the inner margin; in addition it does not reach the distal margin, hence the black ground-colour of the apex is continued to the hinder angle; the white median band of the hindwing is broader than in *poggei* ♂ and the dark marginal band correspondingly narrower. In the ♀ the transverse band of the forewing is white and terminates at vein 2; its spots in cellules 2 and 3 are cut off obliquely and almost straight towards the base. Cameroons to the Congo and Uganda. ab. *plagioscia* Baker only differs in having the transverse band of the forewing more deeply *plagioscia*. incised distally. Congo: Beni Mawambe. ♂-ab. *latifasciata* Suff. (59 c) has on the forewing a somewhat broader *latifasciata*. transverse band, which completely fills up the base of cellule 3. Cameroons. ♂-ab. *moforesa* Suff. has the median band on the upperside of the hindwing brown-yellow, only white at the inner margin in cellule 1 a. Congo: Mukenge. ♂-ab. *vendita* Grünb. The median band on the upperside of the hindwing is narrower, in cellule 2 *vendita*. only 5 mm. in breadth, and at the costal margin yellow as far as vein 5. Sesse Islands.

**P. obliqua** spec. nov. ♂: wings blackish above; forewing with a light orange-yellow transverse band, *obliqua*. which begins somewhat beyond the middle of the costal margin, is about 7 mm. in breadth throughout and at the hinder angle reaches the hindmargin; in cellules 4—6 it is proximally rounded and touches the extreme posterior point of the cell, then in cellules 3 and 2 oblique basewards and almost straight and hence reaches vein 2 beyond its middle, so that more than the basal half of cellule 2 is black and cellule 3 has a large triangular black spot at the base; the orange-yellow spot in cellule 2 reaches the distal margin and is about 8 mm. in length, in 1 a and 1 b the band projects more towards the base than in 2; the hindwing has on both surfaces a white median band, at the costal margin about 4 mm. in breadth, at the inner margin 6 mm., its proximal edge sharp and rectilinear, the distal less sharp; basal area black above, bright red-brown beneath. ♀ unknown to me. The species is nearly allied to *poggei*, *formosa* and *macarista*, but if the shape of the transverse band in these species is constant, as is generally accepted, the ♂ described above must be an independent species, which may be known at once by the position and shape of the transverse band of the forewing in cellules 2 and 3. Fongo Tunga.

**P. entalis** Jord. was described from a single ♂ and is said to be smaller than *poggei* and *pseudeuryta*. *entalis*. Distal margin of the forewing more emarginate; the transverse band almost as in *pseudeuryta*, projecting more distad at vein 4 and on the distal side with three sharp incisions between veins 1 and 4 as in *pseudeuryta*; the transverse band as broad at the hindmargin as at the costal and on its proximal side curved, about as in *poggei*. The median band on the upperside of the hindwing dirty white, tinged with brownish, not yellowish, distally shading quite gradually into the black marginal band; basal area on the underside of the hindwing as in *poggei* and the median band here white. Angola.

**P. pseudeuryta** Godm. & Salv. (dewitzi Stgr.) (58 c). This species has been the subject of a regrettable *pseudeu-* muddle. In describing their species GODMAN and SALVIN expressly say that the example was designated by *ryta*. DR. STAUDINGER *pseudeuryta* spec. nov. But in "Iris" (vol. 9, p. 210) STAUDINGER writes that he obtained *Acræa excisa* Btlr. in rather large numbers from the Cameroons and Gaboon and formerly sent it out as *Acr. pseudeuryta* in litt. Consequently in my work "Rhopalocera Aethiopica" I regarded *P. excisa* and *pseud-*



*euryta* as the same species. Now, however, Dr. JORDAN, who has doubtless examined the type of *pseudeuryta*, has discovered that *pseudeuryta* Godm. & Salv. is identical with *dewitzi* Stgr. and not with *excisa*. STAUDINGER must therefore have formerly confused *dewitzi* and *excisa*. And the ♂♂ are really very similar above, as a glance at the figures (58c) shows, but they are very easily distinguished by the basal half of the hindwing in *pseudeuryta* being dark brown beneath, distally bounded by a whitish median band, whilst in *excisa* the entire under surface has the ground-colour almost the same uniform light brown-yellow and lacks the median band. — ♂: forewing black-brown above with orange-yellow transverse band of almost uniform breadth, which reaches the hindmargin but scarcely the distal margin and on the proximal side is encroached upon in cellules 1 b and 3 by the dark ground-colour; the spots in cellules 1 b—3 are triangularly incised distally. The hindwing is brown-yellow above, with narrow blackish marginal band 3—4 mm. in breadth and not sharply defined and the basal area more or less darkened; the under surface of the hindwing has a dark brown basal area and a whitish median band, 5—7 mm. in breadth, which becomes gradually narrower towards the costal margin. The under surface of the forewing only differs from the upper in the lighter and duller transverse band. The ♀ is unknown to me. Congo and Angola. — *angulata* Suff. (59 b) seems from the description only to differ from *pseudeuryta* in having the marginal band on the upperside of the hindwing narrower at the anal angle and the median band whitish in the middle and perhaps belongs rather to *macarista*. Southern Congo region near Mukenge.

*identata*. **P. identata** Btlr. (59 e) is similar to *P. excisa*. ♂: transverse band of the forewing narrower than in *excisa* ♂; hindwing above similar to that of *macaria*, but lighter, with broad, light yellowish to light brown median band. ♀: transverse band of the forewing white; median band of the hindwing white or slightly yellowish, narrower than in *excisa* ♀, distinct also beneath and basally very sharply defined, narrower than the dark distal margin. Cameroons to Angola.

b) The hindwing beneath not or scarcely darker at the base than in the middle, in any case without sharply defined basal area and without light median band. By this character and the consequently uniform or almost uniform brown-yellow to whitish ground-colour of the hindwing beneath the species of this section may be at once distinguished from those of section a.

*excisa*. **P. excisa** Btlr. (58 c). ♂. The differences between this species and *pseudeuryta* have already been mentioned above. The orange-yellow transverse band of the forewing has an almost uniform breadth of 8—10 mm. and is separated from the distal margin throughout; it is basally prolonged at the hindmargin and usually also accompanied proximally by yellow scales on both sides of vein 2. The upperside of the hindwing is brown-yellow nearly to the base, with free black dots in the basal part, black veins, sharply defined black marginal band about 3 mm. in breadth, and in the distal half with thick black streaks on the interneural folds. The forewing beneath as above, only somewhat lighter. The hindwing beneath yellow-brown to the distal margin, at the base a little darker and more reddish; the basal dots standing out sharply; the veins and the interneural streaks black as above. The ♀ is considerably larger and has the transverse band of the forewing white, interrupted in cellule 1 b, and the ground-colour of the hindwing above yellowish white; the dark marginal band of the latter is somewhat broader and less sharply defined; the under surface of the hindwing is light smoke-brown, somewhat darker at the distal margin and a little more yellowish at the base. Cameroons to the Congo.

*elongata*. **P. elongata** Btlr. (58 b, c) is an easily recognized species with the sexes marked almost alike. In the ♂ the ground-colour is dark black-brown above with a brown-yellow transverse band only about 4 mm. in breadth, which reaches the hindmargin and is but little curved; its spots are rather deeply cleft distally. The hindwing is dark black-brown in the basal part almost to the middle and has there a red-brown transverse band about 10 mm. in breadth at vein 2 and narrowing anteriorly, which is completely intersected by the black veins and streaks between the veins; the black marginal band is sharply defined, but at the apex only 2 mm. in breadth and gradually narrowed posteriorly; the under surface of the hindwing is uniform smoke-brown and the black streaks nearly reach the cell here also. The ♀ only differs in having the transverse band of the forewing somewhat broader and much lighter. Cameroons to the Congo.

**P. consanguinea** differs from the preceding in having the basal part of the forewing above more or less light and the light transverse band more obliquely placed, narrowed or indistinct behind vein 2 and separated from the light basal part by a dark transverse band of the ground-colour, while the upperside of the hindwing is not darkened at the base. The black streaks on the hindwing are long and reach at least the middle. The marginal band on the upperside of the hindwing is sharply defined and is formed nearly as in *elongata*. — *consanguinea* Auriv. (58 b). The basal part of the forewing above as far as vein 3 chestnut-brown with or without longitudinal streak in the cell; the transverse band and the upper surface of the hindwing yellow-brown; the under surface of the hindwing yellowish grey, at the base more or less red-brown. The ♀ is larger and lighter and has the transverse band of the forewing broader and light yellow. Niger to the Congo. ab. *intermedia*. **intermedia** Auriv. only differs in having the whole of the cell of the forewing black. Congo. — *sartina* Jord. seems to be the north-western race. Only the ♀ is yet known; it differs from that of the type-form in having the transverse band of the forewing as dark as in the ♂ and placed nearer to the base, the marginal band of the hindwing is broader and the ground-colour lighter; on the under surface the base is darker brown and *albicolor*. the ground-colour lighter. Gold Coast. — In *albicolor* Karsch (= *arenaria* E. Sharpe) (57 e, 58 b) the transverse



band of the forewing is white and the parts of the upper surface which in the type-form are red-brown to yellow-brown are dirty sand-yellow (♂) or white (♀); the under surface of the hindwing is light grey to white as far as the base. Uganda.

**P. epiprotea** *Btlr.* (58 b) is distinguished by having the transverse band of the forewing placed far beyond the apex of the cell, so that it may be regarded rather as a subapical than a median band; it is straight, directed towards the hindmargin and posteriorly bounded by vein 3, in the ♂ smoke-yellow and 4 mm. in breadth, in the ♀ white and 7 mm. in breadth; in the ♂ the basal part of the forewing to vein 3 is smoke-brown, but in the ♀ black-brown with a small white hindmarginal spot, which only reaches the fold of cellule 1 b, but is continued on the hindwing as an indistinct median band to vein 2 or 3. In the ♂ the hindwing is smoke-brown above, somewhat darker towards the distal margin. The under surface of the hindwing in both sexes is smoke-grey to the base. Niger to the Congo.

### Second Group.

Forewing beneath at the base of the costal margin in cellule 12 with a small, quadrate white spot, bordered with black on both sides, and above with a large, sharply defined, light hindmarginal spot, reaching vein 3 but not the base. Forewing in addition with an obliquely placed subapical band, almost midway between the end of the cell and the apex of the wing, directed towards the hindmargin and composed of 5 or 6 spots in cellules 3—6, (9) and 10. The species of this group may be at once distinguished from all the preceding by the markings.

**P. schubotzi** *Grünb.* ♂. Body as in *P. tellus*; upperside of the forewing black, subapical band 5 mm. in breadth in cellule 5, white tinged with yellowish; hindmarginal spot as in *tellus*, bright ochre-yellow, 11 mm. in breadth at vein 2, 16.5 mm. at the hindmargin; hindwing bright ochre-yellow, the black marginal band very narrow, only 2—3 mm. in breadth at the apex and scarcely reaching vein 3; the black basal spots of the under surface showing through faintly, the black veins and interneural stripes narrow. Under surface of the forewing black, subapical band white, apex and distal margin to before the hinder angle sprinkled with ochre-yellow scales; hindwing beneath with quite uniform ochre-yellow ground-colour without marginal band. In the ♀ the subapical band and the hindmarginal spot of the forewing are pure white on both surfaces, the subapical band is 8 mm. in breadth in cellule 5 and the hindmarginal spot not widened posteriorly, 11.5 mm. in breadth at vein 2 and at the hindmargin, at the latter faintly edged with ochre-yellow on each side; the hindwing as in the ♂, but the marginal band broader, 3.5 mm. in breadth at the apex and reaching to vein 2; the under surface also almost entirely as in the ♂. In the interior of the Congo region.

**P. tellus** *Auriv.* (58 a). The hindmarginal spot of the forewing is broad, posteriorly much widened, at the hindmargin about 13 mm. in breadth and hence covering far more than half of the hindmargin and also completely filling up the proximal part of cellule 2; the black marginal band on the upperside of the hindwing is about 4 mm. in breadth at the apex, becomes gradually narrower posteriorly, but reaches the anal angle; the subapical band of the forewing distally without sharp projection at vein 4. In the type-form the ground-colour of the hindwing and the hindmarginal spot of the forewing are orange-yellow and the subapical band of the forewing somewhat lighter yellow and in cellule 5 in the ♂ 5, in the ♀ 7 mm. in breadth; ♀♀ with white markings also occur, but are rare. In the ♂ the cell of the forewing is often more or less filled up with orange-yellow on both surfaces. Cameroons to the Congo. ♂-ab. **lustella** *Suff.* differs in having the subapical band of the forewing united with the hindmarginal spot. — **eumelis** *Jord.* (= *platyxantha* *Jord.*) (59 a) is an eastern race, in which the subapical band of the forewing is somewhat broader and the hindmarginal spot smaller; the marginal band of the hindwing is narrower and the orange-yellow parts are lighter than in the type-form. Toro and Uganda.

**P. epitellus** *Stgr.* is in many respects intermediate between *tellus* and *epaea*, but is probably more nearly allied to the latter. The brown subapical band of the forewing is formed as in *epaea*, the spot in cellule 3 being placed nearer to the distal margin and almost free; the hindmarginal spot, on the other hand, is even somewhat larger and broader than in *tellus*; the black marginal band on the upperside of the hindwing is of uniform breadth and reaches the inner margin; the under surface of the hindwing is not yellow-brown but dirty brown-grey and has before the fringes a narrow whitish marginal line, which is entirely absent in the allied species. German East Africa.

**P. epaea** is distinguished by having the hindmarginal spot of the forewing narrow and of fairly uniform breadth, at the hindmargin not or scarcely broader than half the hindmargin and not filling up the base of cellule 2, while the black marginal band on the upperside of the hindwing is in the ♂ suddenly much widened at the apex, but in the ♀ often very broad. On the under surface of the hindwing the basal area is brighter red-yellow than the other parts of the wing. — **epaea** *Cr.* (58 a). ♂. Ground-colour of the hindwing above, hindmarginal spot and subapical band of the forewing yellow-brown; hindwing beneath in the distal part more or less suffused with brown-grey and in the middle somewhat lighter. ♀. Subapical band and hindmarginal spot of the forewing white and also a median band on the hindwing, 7 mm. in breadth, which forms a continuation of the hindmarginal spot of the forewing; the whole distal half of the hindwing, on the other hand, black-grey on both surfaces, with black veins and streaks. Senegambia to Angola and the upper Congo. — ♀-ab. **lutosa** *Suff.* is a female form which differs in having the white markings of the typical ♀ light clay-yellow and the proximal part of the dark distal half of the hindwing above broadly light brown to dark yellow-brown or olive-brown; the pure black outer part of the distal half consequently retains almost the same shape as in the ♂. Cameroons to the Congo. — **insularis** *Auriv.* is a race in which the ♂ only differs from



the type-form in having the subapical band of the forewing whitish yellow above and white beneath; in the ♀ the subapical band of the forewing is pure white, but the hindmarginal spot of the forewing and the hindwing are coloured and marked quite as in the ♂; the base of the hindwing beneath is light yellow instead of red-yellow. Island of Fernando Po. — *melina* *Thur.* is only known in the male; the light markings of the upper surface are dull ochre-yellow and the hindmarginal spot of the forewing is differently shaped, as its proximal side runs quite parallel with the costal margin and if produced would intersect the apex of the wing; in addition the distal side of the hindmarginal spot is bordered by two straight lines and forms a distinct angle.

*kivuana*. Nyassaland. — *kivuana* *Jord.* ♂: the markings of the forewing nearly as large as in the type-form, but the subapical band light cream-coloured and the hindmarginal spot light tan-yellow; the hindwing before the middle with a narrow yellowish white transverse band, not sharply defined distally; all the markings beneath yellowish white. ♀: all the markings pure white; the subapical band of the forewing narrower than in the type-form; the transverse band of the hindwing also narrower and more sharply defined. Island of Kwidgwi in Lake Kivu. — *paragea* *Sm.* (59 c) is distinguished by having the markings very narrow and also in the ♂ white; the subapical band of the forewing is only 1—2 mm. in breadth and often almost broken up into spots; the hindmarginal spot is about 3 mm. in breadth and sometimes indistinct or obsolete at the hindmargin; the transverse band of the hindwing is 5 mm. in breadth, sharply (or not sharply = *angustifasciata* *Grünb.*) defined and not or scarcely extending beyond the apex of the cell. Uganda and Sesse Islands. — *homochroa* *Jord.* (59 e). Both sexes similarly coloured and marked and agreeing with the ♂ of the type-form. The orange-yellow colour of the upper surface is somewhat lighter than in the type-form and the dark marginal band on the upperside of the hindwing is much narrower and terminates at the middle of the hindmargin. Abyssinia.

## 2. Genus: *Acraea* F.

The genus *Acraea* is the richest in species of all the Ethiopian butterfly genera and is represented almost everywhere in the region. Outside Africa only a few species occur in South Asia and Australia. The number of forms in the genus is still further raised through the existence of numerous races and seasonal forms in the majority of the species.

The differences between *Acraea* and *Planema* have already been given above, p. 239. It may further be added that the pupae of *Acraea* are unarmed or have only small elevations on the back of the abdomen. The larvae do not differ from those of *Planema* in structure and the arrangement of the spines.

In the greater number of the species both wings bear black dots or round spots on a light ground. The number and arrangement of these dots are of great importance in determining the species and specific groups. I therefore give here a general survey of them. They may be divided into basal dots, median dots, discal dots and submarginal dots.

The basal dots only occur in the cells and in cellules 1 a, 1 b and 11 of the forewing and cellules 1 a—1 c, 7 and 8 of the hindwing; in 1 b of the forewing they are placed before the origin of vein 2 and in 11 before the origin of vein 11; in cellule 7 of the hindwing near the base of the cellule and in cellule 8 before the precostal vein.

The median dots are placed at or on the discocellular veins and are often united into a transverse streak or spot at the end of the cell.

The discal dots usually form just beyond the apex of the cell an often very irregular transverse row from the hindmargin (inner margin) to the costal margin of both wings and may consist of a dot in each cellule from 1 a—11 on the forewing and 1 a—7 on the hindwing. Single dots are often absent and the arrangement of these is of great systematic importance.

The submarginal dots form a usually regular curved row between the discal dots and the distal margin and parallel with the latter, and may occur in cellules 1 b—8 of the forewing and 1 b—7 of the hindwing. They are entirely absent in many species.

After pairing the ♀♀ possess at the end of the abdomen beneath an appendage which is quite differently formed in different species and can therefore be utilized as a distinguishing character. This appendage recalls the pouch of the *Parnassius* ♀♀ and is probably also formed in a similar way (by a fluid secreted by the ♂ at copulation, which becomes hard in the air). Although the ♀♀ can be easily distinguished by these appendages the latter are not here described in the separate species, as a description without figures would be scarcely intelligible.

The genus is very homogenous and all attempts to split it up into several genera have consequently proved failures \*). The species can, however, be divided into three sharply defined groups according to the markings.

### Synopsis of the Groups.

I. Hindwing at least beneath with black dots. Veins 6 and 7 of the hindwing never stalked.

\*) H. ELTRINGHAM has just published an excellent monograph of the genus in *Trans. Ent. Soc. London* 1912. We have availed ourselves of some of his figures here.

- A. Hindwing beneath at the distal margin in the middle of each cellule with a simple black longitudinal streak on the fold; occasionally at the distal margin almost diaphanous, so that the streaks are visible at most in cellules 1 b and 2; forewing, however, in this case with broad dark transverse markings. First Group.
- B. Hindwing beneath at the distal margin without black longitudinal streaks on the folds between the veins. Second Group.
- II. Hindwing on both surfaces without black dots. Veins 6 and 7 of the hindwing sometimes stalked. Third Group.

### First Group.

Through the black longitudinal streaks, alternating with the dark veins, at the distal margin on the underside of the hindwing and often also of the forewing the species of this group approach *Planema* in markings. Hence some species were formerly even incorrectly referred to *Planema*. On the other hand the simple light marginal spots between the veins on the underside of the hindwing, which occur in nearly all the species of the second group, are always entirely absent here.

The numerous species may be divided into 6 subgroups.

### Synopsis of the Subgroups.

- I. Forewing entirely without black basal and discal dots. Only in the ♀♀ of *A. alciope* discal dots 1b—3 are more or less well developed; this species, however, differs in the presence of a light median band from all the species of the sixth subgroup.
- A. Forewing black-brown with a light subapical band and a large light hindmarginal spot or crossed by a light transverse band, which widens towards the hindmargin. First Subgroup.
- B. Forewing smoke-brown to blackish with light or transparent spots or sometimes almost entirely transparent; never with hindmarginal spot or continuous, scaled transverse band from the costal to the hindmargin (cf. however *butleri* Auriv.).
- \* Cellule 7 of the hindwing at least with a black dot, never entirely diaphanous.
1. Forewing in cellule 4 with a light or transparent spot, placed near to the distal margin and nearly always (not in *butleri*) entirely or almost entirely separated from the spots in cellules 5 and 6; in cellule 1 b a similar spot, placed as near to the distal margin as that in 4 and much nearer than the light spot in 2.
- a) Hindwing at most with one black dot in the cell and without black dots on the discocellulars. The light median area on the upperside of the hindwing also without black discal dots. Second Subgroup.
- b) Hindwing with two black dots in the cell and with black dots on the discocellulars. The light median area of the hindwing with black discal dots at least in 1 b, 1 c, 3, 4 and 5. Third Subgroup.
2. Cellules 4—6 of the forewing entirely or for the most part diaphanous or each with a light spot; these spots form a continuous subapical band and the spot in 4 is placed not or scarcely more distad than the one in 5. When cellule 1 b has a light spot it is not placed nearer to the distal margin than the one in 2. The cell of the hindwing nearly always containing two black dots and with black dots at its apex. Fourth Subgroup.
- \*\* Cellules 5—7 of the hindwing always without black dots, usually diaphanous. Fifth Subgroup.
- II. Forewing at least in 1 b and 2 with the usual black basal and discal dots. Sixth Subgroup.

### First Subgroup.

*Planema*-like species, which may be easily known by the hindmarginal spot of the forewing. The species are nearly allied and very variable; several varieties and aberrations were formerly regarded as independent species. The discocellulars of the hindwing without black dots.

### Synopsis of the Species.

- I. Cell of the forewing unicolorous black without light spot in the apical part. Subapical band of the forewing at least to vein 4 continuous and broad.



A. The subapical band and the hindmarginal spot of the forewing completely united into a transverse band by a broad spot in cellule 3. *A. alciope*.

B. The subapical band and the hindmarginal spot of the forewing more or less broadly separated or at most touching one another at a point on vein 3.

a) The subapical band and the hindmarginal spot of the forewing are broadly separated or approach one another closely at vein 2. Larger species.

\* The dark marginal band on the upperside of the hindwing usually narrow, at most 8 mm. in breadth, and sharply defined proximally; occasionally not sharply defined; but the subapical band in this case only 3.5 mm. in breadth. *A. esebria*.

\*\* The dark marginal band on the upperside of the hindwing broad and not sharply defined, long black rays extending far beyond it proximally; the subapical band of the forewing more than 3.5 mm. in breadth. *A. jodutta*.

b) The subapical band and the anteriorly broad hindmarginal spot of the forewing nearly touch at a point on vein 3. A smaller species with a wing expanse of at most 50 mm. *A. disjuncta*.

II. Cell of the forewing at the apex with a light spot, which usually joins the hindmarginal spot. The subapical band is very narrow and consists of three small spots in 5, 6 and 10 and one in 4 widely separated from these.

a) Hindwing on both surfaces with broad dark marginal band. *A. conjuncta*.

b) Hindwing without dark marginal band. *A. ansorgei*.

*alciope*. **A. alciope** Hew. (57 e). The ♀ has developed several forms, but the ♂ varies little. In the ♂ the hindwing and the transverse band of the forewing are light ochre-yellow and the dark marginal band on the upperside of the hindwing about 4 mm. in breadth. In the ♀ the transverse band of the forewing is brown-yellow and distally incised; the hindwing is brown-yellow and has a broad dark marginal band as in the ♂.

*macarina*. Ivory Coast to the Congo and Uganda. — ♀-ab. **macarina** Btlr. (57 e) only differs from the typical ♀ in having the dark marginal band on the upperside of the hindwing absent or at least posteriorly very narrow.

*bakossua*. Gold Coast to the Congo. — ♀-ab. **bakossua** Strand. Transverse band of the forewing in the anterior third white, narrower than usual. Cameroon mountains. — ♀-ab. **cretacea** Eltringh. has a whitish transverse band on the forewing. Lagos. — ♀-ab. **fumida** Eltringh. has both wings dark brown and almost without markings.

*aurivillii*. Lagos. — ♀-ab. **aurivillii** Stgr. (57 e). Transverse band of the forewing orange-yellow, hindwing blackish with a white median band 5 mm. in breadth. Cameroons to Uganda. — ♀-ab. **latifasciata** Grünb. only differs from *aurivillii* in having the transverse band of the forewing not incised on the distal side, but almost entire-

*tella*. margined and broader. Sesse Islands. — ♀-ab. **tella** Eltringh. Transverse band of the forewing orange-yellow; hindwing yellow-brown with the dark marginal band sharply defined but narrow and gradually decreasing in breadth towards the anal angle. Uganda. — **schecana** Rothsch. & Jord. seems to be a separate race occurring in Abyssinia; the ♂ has the transverse band of the forewing lighter and the marginal band of the hindwing broader; ♀ unknown.

**A. esebria**. The differences between this very variable species and the nearly allied *jodutta* have been given above in the synopsis. The numerous forms differ especially in the colour of the light markings, in the breadth of the subapical band and the hindmarginal spot of the forewing and in the development of the dark marginal band on the upperside of the hindwing. According to TRIMEN the larva is light ochre-brown; each segment in the middle with a black transverse streak edged with light yellow; head black; spines black, only the lateral spines on segments 5—11 yellow; lives on species of the genus *Fleurya*. Pupa white with slightly yellowish tone and fine black lines and small black spots; the first three segments of the abdomen with orange-yellow, black-bordered dorsal spots, in the middle of which is placed a small elevation; the points on the head short. — **esebria** Hew. The hindmarginal spot of the forewing large and broad, almost reaching the base of cellules 1 a and 1 b and covering the base of cellule 2, brown-yellow; subapical band narrow, its spots in 5 and 6 shorter or at least not longer than the black basal part of these cellules, in the ♂ light ochre-yellow or whitish yellow, in the ♀ white. Hindwing brown-yellow above with a black marginal band about 4 mm. in breadth. Cape to the Congo and British East Africa. — **jacksoni** E. Sharpe (57 d) is very similar to the type-form, only differing in having the subapical band of the forewing as dark as the hindmarginal spot and broader; in the ♀ the subapical band is even broader and reaches vein 2, where it touches the hindmarginal spot; the breadth of the marginal band of the hindwing is very variable. Mashonaland to British East Africa. — ab. **ertli** Auriv. closely approaches the form *jacksoni*, only differing materially in having the subapical band of the forewing still broader and white; the hindmarginal spot of the forewing and the ground-colour of the hindwing above are red-yellow in the ♀, light ochre-yellow in the ♂. Usambara. — f. **pseudoprotea** Btlr. closely approximates to the type-form, only differing in having the ground-colour of the hindwing above and the hindmarginal spot of the forewing lighter yellowish and the marginal band of the hindwing narrower.

*amphi-protea*. Angola. ♀-ab. **amphiprotea** Btlr. is also similar to the type-form, the only particular differences being that the dark marginal band on the upperside of the hindwing is not sharply defined proximally and the subapical band of the forewing is light brown-yellow like the other markings. Angola. ♀-f. **metaprotea** Btlr. The very broad subapical band and the large hindmarginal spot of the forewing touch in cellule 2 and are light brown-yellow; the hindwing



is even lighter brown-yellow and has only a dark marginal line instead of the band; approximates to the form *jacksoni*. Angola. — ♀-ab. **nubilata** *Eltr.* "The darker areas are sepia black. The base of forewing cell, the inner-marginal patch, and the basal half of the hindwing are dark sepia grey. The forewing subapical band is greyish white". Zululand. — The three following forms differ from the preceding in the smaller and narrower hindmarginal spot of the forewing, which always leaves the base of cellules 1a and 1b free and also scarcely if at all covers the base of cellule 2. — **masaris** *Oberth.* (57 c) is on an average smaller than *esebria*; the light markings are red-yellow or brown-yellow in the ♂ and white or light yellow in the ♀; the subapical band is scarcely broader than in the type-form. Comoro Islands and quite similar forms also in Usambara. — **pro-tea** *Trim.* (57 c) may be at once known by the small, not sharply defined hindmarginal spot of the forewing, which does not extend beyond vein 2; the subapical band of the forewing is narrow and its spots in cellules 4—6 are never longer than the black basal part of the cellules; the base of the hindwing above blackish, often as far as vein 2, and the marginal band of the hindwing broad; the light markings are light yellow in the ♂, light yellow or white in the ♀. Cape to Angola and British East Africa. f. **monteironis** *Btlr.* (57 d) is similar to *protea* and like this has a small hindmarginal spot on the forewing, anteriorly bounded by vein 2; all the light markings are white, rarely light yellow; it differs from *protea* in the long, broad subapical band of the forewing, which is about 6 mm. in breadth and has usually a spot in cellule 2 also. Angola, Mashonaland, German and British East Africa.

**A. jodutta** *F.* (57 e). Wings above black-brown; the forewing as in *esebria* with a light subapical band, which is always broad and has a spot in 3, and a sharply defined hindmarginal spot about 6 mm. in breadth, reaching vein 3 but leaving the base of cellules 1a and 1b free; the hindmarginal spot is continued on the hindwing as a median band of equal breadth or somewhat widened; the light markings are dull light yellow in the ♂, pure white in the ♀. Senegal to the Cameroons. ♀-ab. **carmentis** *Dbl. & Hew.* (57 e) only differs from the ♀ of the type-form in the subapical band of the forewing having a spot in cellule 2 also so that it is merely separated from the hindmarginal spot by a fine line of the ground-colour. Among the type-form. — ♀-ab. **dorotheae** *E. Sharpe* (57 d as *pseudoprotea* and *metaprotea*). The subapical band of the forewing is orange-yellow to whitish; the hindwing and the hindmarginal spot of the forewing are orange-yellow; the former has thick black streaks on the folds and its marginal band is only developed in the anterior part and even there only 2—3 mm. in breadth. Uganda and British East Africa. — ♀-ab. **interjecta** *Eltr.* The subapical band of the forewing white; the hindmarginal spot of the forewing only indicated by light ochre-yellow scales except in 1a, where it is sharply defined; a white longitudinal streak in 2 near the distal margin; basal half of the hindwing light ochre-yellow, distal half suffused with red-brown and at the apex blackish. British East Africa. — ♀-ab. **subfulva** *Eltr.* only differs from the typical ♀ in having the distal half of the hindwing above red-brown and only at the distal margin more or less blackish. Sierra Leone. — ♀-ab. **castanea** *Eltr.* (59 a). The subapical band of the forewing indistinct, dark grey; hindmarginal spot yellow-brown; hindwing above chestnut-brown with narrow black marginal band only 3 mm. in breadth and narrowed towards the anal angle, beneath dark brown-grey, at the base reddish. Lagos. — ♀-ab. **inaureata** *Eltr.* (57 d, as *amphi-protea*; 59 d). Wings bright brown-yellow at the base of the cell, in 1a and 1b nearly to the distal margin and at the base of cellule 2; subapical band white; hindwing above bright brown-yellow, not darkened at the base and without dark marginal band, at the distal margin with distally thickened black longitudinal streaks. Nyassaland. — **aethiops** *Rothsch. & Jord.* is the Abyssinian race and differs in the male in having the hindmarginal spot of the forewing broader, so that at the hindmargin it is only 3 mm. from the base, while the cell has a nebulous spot and the black parts of the hindwing are narrower. In the ♀ the subapical band is white or orange-yellow, the hindmarginal spot large and orange-yellow and the upperside of the hindwing almost entirely orange-yellow, the black rays in the posterior part indistinct.

**A. disjuncta** *Sm.* (= *nandensis* *E. Sharpe*) (60 c) resembles a small ♂ of *jodutta*; both wings blackish above with light yellow markings; the hindmarginal spot of the forewing is broad, without, however, reaching the base of cellules 1a and 1b; the subapical band is about 4 mm. in breadth and has a small spot in 3, which touches the hindmarginal spot; the median band on the upperside of the hindwing is about 8 mm. in breadth and the dark, sharply defined marginal band consequently at most 3 mm. Nandi, Ruwenzori; Lake Kivu.

**A. conjuncta** *Sm.* has an expanse of only 40—46 mm. and the sexes are similarly marked and coloured. Wings above with blackish, beneath with dark grey ground-colour; the dark ochre-yellow hindmarginal spot is about 4 mm. in breadth, reaches vein 3 without completely covering the base of cellule 2, occasionally also forms a small spot at the base of cellule 3 and joins the spot in the cell, which, however, forms almost a right angle with the hindmarginal spot; the small subapical spots are also dark yellow; the hindwing is dark yellow, at the base and the inner and distal margins blackish; the marginal band about 3 mm. in breadth. The under surface is lighter, but otherwise little different. British East Africa. — f. **interrupta** *Eltr.* has the median transverse band of the forewing broken up into separate spots. ♀-ab. **silacea** *Eltr.* The light markings of the upper surface are light yellow. ♀-ab. **mutata** *Eltr.* only differs from *silacea* in having the subapical spots of the forewing white. ♀-ab. **pica** *Eltr.* has all the light markings white. ♀-ab. **lutealba** *Eltr.* has the light spots of the forewing orange-yellow and the median band of the hindwing white. ♀-ab. **suffusa** *Eltr.* is character-



ized by having the forewing blackish only at the base and apex, otherwise suffused with orange-yellow; on the hindwing the marginal band is irrorated with yellow scales.

*ansorgei*. **A. ansorgei** Sm. The forewing marked almost exactly as in *conjuncta*; the hindwing above unicolorous orange-yellow, beneath clearer yellow with a nebulous grey median band; the light markings are sometimes cream-yellow and the subapical dots of the forewing white. Hitherto only ♀♀ known. British East Africa: Nandiland.

### Second Subgroup.

In the very characteristic arrangement of the light spots of the forewing and the reduction of the black dots in the basal part of the hindwing the species of this subgroup differ from those of the following. In the position of the spots in cellules 4—6 of the forewing they approximate to the last two species of the preceding subgroup. ELTRINGHAM places *oreas* in the *servona* group, but in my opinion it fits better in the same group as *lycoa* and *johnstoni*.

**A. lycoa** is a very variable species nearly allied to *johnstoni*; it differs from this in having the light basal or median area of the hindwing distally rounded or occasionally entirely absent. The forewing has normally 5 (—7) white or whitish spots, in the ♂ sometimes dull and very indistinct; the first is placed in 1 b close to the distal margin and is quite free and rounded or partly joined to the spot in 2, but never extends so far basad as the latter; the third is placed in 4 near to the distal margin quite free or touching the spot in 5; the spots in 5 and 6 are of equal length, joined to one another and to small spots in cellules 8 and 9; the cell always unicolorous without spots. — **lycoa** Godt. ♂: both wings thinly scaled, semitransparent; spots of the forewing indistinct; basal area of the hindwing large, dull reddish yellow, distally rather sharply defined against the grey marginal band. ♀: wings thinly scaled, dark grey with distinct white markings; marginal band of the hindwing broad, not sharply defined. Sierra Leone to Nigeria. — **media** Eltr. (57 a, as *lycoa*). ♂. Spots of the forewing more distinct; hindwing in the middle somewhat tinged with reddish yellow but without distinct basal area. ♀ with darker ground-colour and sharply defined marginal band on the hindwing. Cameroons to Toro. — **bukoba** Eltr. ♂. Forewing dark olive-brown; spots light yellow, sharply defined; basal area of the hindwing ochre-yellow. ♀ similar to the ♂, but darker, with white or whitish markings. The spot in 1 b of the forewing in both sexes entirely free and broadly separated from the spot in 2. Urundi. — **entebbia** Eltr. The spot in 1 b of the forewing quite free; ground-colour in the ♂ yellowish grey; spots of the forewing small, dull yellowish; basal area of the hindwing small, not reaching the inner margin; ground-colour in the ♀ very dark, spots of the forewing white, basal area of the hindwing whitish yellow. Uganda. — **tirika** Eltr. Spot 1 b of the forewing widely separated; ground-colour of the forewing in the ♂ olive-brown, in the ♀ very dark, spots small; basal area of the hindwing yellowish. British East Africa. — **fallax** Rogenh. (57 c). Ground-colour in both sexes nearly black; spots of the forewing small, in the ♂ yellowish, in the ♀ white, spot 1 b widely separated from spot 2; basal area of the hindwing sharply defined, yellowish. German East Africa: Kili-kenia. mandjaro. — **kenia** Eltr. Smaller than the other races; ground-colour nearly black; spots of the forewing in the ♂ lemon-yellow, in the ♀ white; basal area of the hindwing in both sexes lemon-yellow. British East Africa: Kenia; Kikuyu. — **aequalis** Rothsch. & Jord. Sexes similar; spots of the forewing and basal area of the hindwing dull yellowish; marginal band of the hindwing yellowish dark brown. Abyssinia.

**A. johnstoni**, as already mentioned above, only differs from *lycoa* in not having the basal area of the hindwing uniformly rounded distally, but more or less projecting or angled in cellule 4; this character is especially pronounced on the under surface. The species is no less variable than *lycoa*; the light spots of the forewing are light yellow or white and the spot in 1 b is placed quite free; the forms are connected by intermediates. Palpus yellowish. — **johnstoni** Godm. (57 d). The black ground-colour of the forewing above is restricted to the base and the distal margin, being covered in the middle by a very broad orange-yellow band, irregularly defined distally, which reaches the light yellow spots, but extends scarcely or not at all beyond them; hindwing with white basal area and broad black marginal band. German and British East Africa. — f. **fulvescens** Oberth. Both wings above pale orange-yellow as far as the narrow marginal band, which has an almost uniform breadth of 2—3 mm.; spots of the forewing and basal area of the hindwing somewhat lighter yellow. German and British East Africa. — The following forms agree with one another in having the ground-colour of the forewing above uniform black-brown without orange-yellow median band. — f. **confusa** Rogenh. Spots of the forewing white; basal area of the hindwing light ochre-yellow with broad black marginal band as in the type-form; is confusingly similar to f. *fallax* of *lycoa* and commoner than the type-form. Nyassaland to British East Africa and Uganda. — f. **flavescens** Oberth. Both the spots of the forewing and the basal area of the hindwing light ochre-yellow; otherwise similar to f. *confusa* and with the same distribution. — f. **semialbescens** Oberth. only differs from *confusa* in having the basal area of the hindwing brown-yellow. Nyassaland and German East Africa. — f. **octobalia** Karsch. Spots of the forewing and basal area of the hindwing brown-yellow. German East Africa.

**A. butleri** Auriv. (= *toruna* Sm.). This species also is regarded by ELTRINGHAM as a form of *johnstoni*. Although the male genitalia are formed as in *johnstoni* it seems to me better for the present and until transitional forms have been discovered to cite *butleri* as a separate species, as it differs from *johnstoni* in the black



palpus and in having the spots of the forewing quite differently developed. The spots of the forewing bright yellow; that in 4 is placed with its outer end almost as near to the distal margin as the same spot in *johnstoni*, but is proximally long-produced and broadly united with the spot in 5; in addition the spot in 1 b is joined to the one in 2 and similar spots usually occur in 3 and 1 a also; hence all the light spots of the forewing are united into a yellow transverse band, which is placed behind the cell, leaves the base of cellules 2—6 free, extends from the posterior to the costal margin and has distally two large excisions (in 1 b and 4); basal part of the forewing bright red-brown as far as the transverse band, at the base more or less blackish. Basal area of the hindwing white, yellowish or reddish; marginal band broad. German East Africa and Toro.

**A. oreas** *E. Sharpe* (57 e). Both wings deep black above, with yellow markings; the forewing spotted quite as in *fallax* and *confusa*, but in addition with a similar spot in the cell; the hindwing with a long but narrow median area, which covers the cell and the base of cellules 2—7, but is proximally bounded by vein 2, thus not nearly reaching the inner margin; the forewing is somewhat longer and narrower than in *johnstoni* and *lycoa*. On the under surface the hindwing and the apical part of the forewing have a rust-brown ground-colour with black longitudinal streaks; the light markings almost as above, but the yellow median area of the hindwing emits a branch to or almost to the middle of the inner margin. Angola; German and British East Africa; Uganda. ab. **albimaculata** *Neave*. Spots of the forewing white. In the same localities as the type-form. f. **angolana** *Lathy*. Marginal band of the hindwing beneath and apical part of the forewing with grey-yellow ground-colour; spots of the forewing white. Angola. ♀-ab. **radians** *ab. nov.* (= *angolana* ♀-ab. *Lathy*) only differs from *angolana* in the yellow median area of the hindwing above extending in broad rays between the veins nearly to the distal margin; the spots on the upperside of the forewing yellowish. Angola.

oreos.

albimaculata.  
angolana.  
radians.

### Third Subgroup.

Here belongs only a single little known and very distinct species, whose affinities are uncertain. In the position of the light spots in cellules 1 b and 4 of the forewing it most nearly approaches the second subgroup.

**A. insularis** *E. Sharpe*. Forewing above black-brown with a yellow transverse spot in the middle of the cell and a similar orange-yellow spot at its apex, an orange-yellow spot in the basal part of 2, a free, crescentic, small spot in 1 b near the distal margin and three small orange-yellow subapical spots in 4—6, of which the one in 4 is placed nearer to the distal margin and quite free. The hindwing above at the base blackish as far as vein 2, then with a broad median band about 5 mm. in breadth, at the inner margin and towards the base light yellow, distally orange-yellow, projecting almost rectangularly distad in cellule 4 (almost as in *johnstoni*) and adorned with black discal dots; the hindwing beneath light yellowish to the base with free black dots and beyond the middle with a broad blackish transverse band, which is separated from the distal margin by a fine light line; this light marginal line is broken up into small spots by the dark veins and the streaks on the interneural folds. Island of São Thomé.

insularis.

### Fourth Subgroup.

According to the discoveries of recent years some of the numerous species of this subgroup are very variable and can only with difficulty be sharply differentiated in a synopsis. In order, however, to facilitate the determination as far as possible I have made the attempt.

### Synopsis of the Species.

I. Hindwing above at the base more or less broadly darkened; its black discal dots incompletely developed (always wanting in cellules 3 and 4) and placed near the base.

A. The longitudinal streaks of the interneural folds on the under surface of the hindwing reach the distal margin and are of uniform thickness or somewhat thickened towards the distal margin.

a. The apical part of the forewing (as far as the cell and vein 3) more or less hyaline or at least in 4—6 with hyaline or transparent whitish or light yellowish spots.

\* Hindwing between veins 3 and 8 with a diaphanous transverse band, which covers the base of cellules 3—6. *A. semivitrea*.

\*\* Hindwing without diaphanous spots.

§. Median band or median area of the hindwing sulphur-yellow to whitish yellow.

*A. servona*.

*A. circeis*.

*A. safie*.

§§. Median band or median area of the hindwing red to red-yellow, occasionally entirely absent.

0. Forewing more or less densely scaled and at least with indications of light spots. Hind-



- wing above with light median band which reaches the inner margin or at least vein 1 b.
- †. Hindwing beneath uniform light orange-yellow, not lighter in the middle, above only with dark marginal line. *A. grosvenori*.
- ††. Hindwing beneath distinctly lighter in the middle, above with black marginal band.
1. Marginal band much narrower than the light median band.
    - a. Hindwing beneath without dark marginal band. *A. parrhasia* ♂; *pelopeia*.
    - b. Hindwing beneath with dark marginal band and longitudinal streaks proximally united by a line. *A. peneleos* ♂.
  2. Marginal band as broad as the median band or broader. *A. servona* f. *rubra*; (*A. safie*); *A. newtoni*.
00. Forewing entirely transparent, only narrowly darkened at the margins and altogether without light spots. Hindwing above and beneath black, occasionally with red median area, which, however, does not reach the inner margin *A. cinerea*.
- b. The apical part of the forewing fully scaled, unspotted or with red spots in 4—6.
- \* The veins and the short longitudinal streaks on the underside of the hindwing united into a black marginal band 3 mm. in breadth; this marginal band encloses two small spots of the yellow ground-colour in each cellule. *A. buschbecki*.
- \*\* The black longitudinal streaks at the distal margin of the hindwing beneath longer and quite free. *A. orina* ♂.
- B. The longitudinal streaks of the interneural folds on the under surface of the hindwing are proximally thickened, distally gradually narrowed, and scarcely if at all reach the distal margin.
- †. Hindwing without diaphanous spots.
- a. Cell of the forewing at the apex with a sharply defined light yellow, white or transparent spot.
 

\* The spot in the cell and in cellule 2 of the forewing completely scaled, sulphur-yellow. *A. melanoxantha*.

\*\* These spots white and semitransparent. *A. mairessei*.
  - b. Cell of the forewing unicolorous without spots or partially diaphanous; the hyaline or transparent parts, however, not sharply defined. *A. penelope*.
- ††. Hindwing with diaphanous spots in cellules 3—6. *A. semivitrea*.
- II. Hindwing above at the base not or scarcely darkened and hence with free or almost free basal dots; the black discal dots are well developed and are normally placed in a curve beyond the cell.
- A. Hindwing with transparent or semitransparent, grey to blackish marginal band, in which the streaks of the interneural folds are only very indistinct.
- a) Marginal band of the hindwing 3.5 mm. in breadth at vein 4. *A. quirinalis*.
  - b) Marginal band of the hindwing only about 2 mm. in breadth. *A. orestia*.
- B. Hindwing with fully scaled, black or black-spotted distal margin.
- a) Forewing at least beyond the middle hyaline or transparent with dark veins and dark margins or with transparent spots not sharply defined.
 

\* The black streaks on the underside of the hindwing are short and do not reach the distal margin or only with a very fine point. The forewing above scaled with red in the cell (at least at the base) and in the greater part of cellules 1 b and 2.

†. Cellule 3 of the forewing vitreous at the base. *A. igola* ♂.

††. Cellule 3 of the forewing black-scaled with or without red spot.

    1. The veins at the distal margin of the hindwing beneath broadly black with short, thick streaks between them. *A. conradti*.
    2. The veins and the streaks on the folds not thickened. *A. aubyni*.
  - \*\* The black streaks on the underside of the hindwing reach the distal margin.
 

†. Hindwing above proximally to the black marginal band entirely without black streaks on the interneural folds. Basal part of the forewing scaled with red or red-yellow as far as vein 3.

    1. Hindwing above with large, triangular, contiguous black spots at the extremities of the veins. Cell of the forewing brown-red to or almost to its apex. *A. sambavae*.
    2. Hindwing above with broad, continuous black marginal band.
      - a) The outer black dot in the cell of the hindwing placed opposite to vein 2. Cell of the forewing scaled with red-brown to or almost to the apex. *A. strattipocles*.
      - b) The outer black dot in the cell of the hindwing placed proximally to vein 2. Cell of the forewing more or less broadly diaphanous at the apex. *A. masamba*.

††. Hindwing above proximally to the black marginal band with dark streaks on the interneural folds.

    1. Forewing in the cell to its apex, in cellules 1 a and 1 b almost to the distal margin

- and in the proximal half of cellule 2, scaled with red-yellow. *A. igola* ♀.
2. Forewing in the basal half not or only indistinctly reddish scaled, semitransparent; veins usually broadly edged with black and the cell with a dark spot. *A. parrhasia* ♀.  
*A. peneleos* ♀.
- b) Forewing in the apical part fully scaled and with sharply defined red or whitish spots in 4—6.
- \* Subapical band of the forewing above red, beneath yellowish. The red colour in cellule 1 b of the forewing above divided by a large black spot and with a black longitudinal streak at the base. The cell of the forewing with a black spot. *A. buschbecki*.
- \*\* Subapical band of the forewing whitish. The red colour in cellule 1 b not divided. *A. orina* ♀.

**A. semivitre** *Auriv.* (27 b). Forewing diaphanous with fine black veins and black margins; the broad marginal band forms on its proximal side triangular black spots on veins 2—5. Hindwing above at the base black-brown with black dots and at the distal margin with a broad black band, between these with light median band, widened at the inner margin, sulphur-yellow in cellules 1 a, 1 b, 1 c and 2 and often also in the cell, but in the other cellules diaphanous. On the under surface all the black parts of the upperside are bright light yellow; the black streaks on the interneural folds are proximally thickened, distally pointed, and often do not quite reach the distal margin; cell with 2 or 3, cellule 7 with 1 or 2 black dots; cellules 2—6 without discal dots. Congo to Uganda. *semivitre*.

**A. servona**. Median band on the upperside of the hindwing distally more or less rounded, nearly always lemon-yellow to sulphur-yellow; the streaks on the folds of the hindwing beneath are of uniform breadth and reach the distal margin; base of the hindwing above darkened at most to vein 2; forewing with transparent spots in cellules 1 b—6 and the apex of the cell, the spots in cellules 1 b and 3 are sometimes indistinct or entirely absent; beneath the black parts of the upperside are light yellow to red-brown. — **servona** *Godt.* (= *lycoides* *Bdv.*) (57 b). Spots in cellules 1 b and 3 of the forewing distinct; the dark basal area on the upperside of the hindwing reaches vein 2; under surface with the ground-colour yellow; median band of the hindwing sulphur-yellow. Cameroons to Angola. — **orientis** *Auriv.* (57 c). Ground-colour of the upper surface deeper black, of the under grey-yellow; the spots in 1 b and 3 of the forewing are absent or indistinct and small, the others with distinct white scaling; dark basal area of the hindwing above small, not reaching vein 2. Hindwing beneath with two black dots in the cell and two in cellule 7. German East Africa. STRAND has named the following trifling aberrations of this race: ab. **depunctella** *Strand*. Hindwing without black dots in the cell and with 1 or 2 in cellule 7. German East Africa. ab. **unipunctella** *Strand*. One dot in the cell and 2 in cellule 7 of the hindwing. German East Africa. ab. **semipunctella** *Strand*. One dot in the cell and one in cellule 7 of the hindwing. German East Africa. ab. **transienda** *Strand* only differs from *semipunctella* in having the light spots in cellules 1 b and 3 of the forewing more distinct. German East Africa. — **rhodina** *Rothsch.* (= *subochreata* *Grünb.*) (60 d) has the ground-colour of the under surface red-brown, but otherwise agrees with the type-form. Uganda and Abyssinia. — ♀-ab. **rubra** *Eltr.* (60 d) differs from all the other forms of this species in having the median band on the upperside of the hindwing narrower and red; the marginal band of the hindwing as broad as the median band or somewhat broader; forewing spotted as in *orientis*. Gaboon and Angola. — **limonata** *Eltr.* Only ♂♂ known; they differ from the type-form in having the light spots in cellules 1 b and 2 on the upperside of the forewing scaled with lemon-yellow instead of transparent. Fernando Po. — **tenebrosa** *Eltr.* Under surface as in *rhodina*, only somewhat darker; forewing as in *orientis*; the median band of the hindwing reaches neither the costal nor the inner margin. German East Africa. — f. ? **reversa** *Eltr.* has the tarsal claws of the ♂ of unequal size, whilst in all the other forms they are equal in size; otherwise said to agree with the type-form. Congo. *depunctella*.  
*unipunctella*.  
*semipunctella*.  
*transienda*.  
*rhodina*.  
*rubra*.  
*limonata*.  
*tenebrosa*.  
*reversa*.

**A. circeis** *Drury* is very similar to the type-form of the preceding species, merely differing in having the forewing black-scaled only at the margins and on the veins, otherwise almost transparent, while the light yellow median band of the hindwing is of uniform breadth with the distal boundary almost straight. Sierra Leone to North Angola. *circeis*.

**A. melanoxantha** *E. Sharpe*. Both wings above black, thickly scaled; the forewing with two yellow spots in the middle (in 2 and the apex of the cell) and 3 semi-transparent whitish subapical spots in 4—6; hindwing above with narrow lemon-yellow median band, which is only 3 mm. in breadth in the middle and becomes gradually narrower towards the inner margin. Beneath the hindwing and the apex of the forewing are light yellow with black veins and streaks at the distal margin; the latter are finely pointed distally and scarcely reach the margin; cell of the hindwing only with one black dot. Elgon Mountain. *melanoxantha*.

**A. mairessei** *Auriv.* Wings above fully scaled, black with 6 semitransparent white spots on the forewing (in 1 b, 2, 4—6 and in the apex of the cell) and a sulphur-yellow median band on the hindwing, formed as in *melanoxantha*. Beneath the ground-colour of the hindwing and 8 or 9 elongate marginal spots on the *mairessei*.



forewing are bright sulphur-yellow; the veins of both wings very broadly edged with black at the distal margin; the streaks on the interneural folds are very short and thick, more like spots, and do not nearly reach the distal margin; cell of the hindwing only with one black dot. Congo and Uganda. — f. *dewitzi* Auriv. only differs in having the median band on the upperside of the hindwing red-yellow and the white spots in 1 b and the cell of the forewing smaller. Congo region: Kassai.

*penelope*. **A. penelope** differs from the following very similar species in the abbreviated streaks on the underside of the hindwing, which do not reach the distal margin; the cell of the forewing is sometimes unicolorous dark without spots, sometimes more or less diaphanous; the forewing in 1 b—6 with light or transparent spots, which are often united into a transverse band; the hindwing above at the base broadly darkened (occasionally in the ♀♀ very slightly) and then with a red or red-yellow (occasionally light yellow) median band and broad black marginal band. The under surface of the hindwing is light coloured, usually yellowish, and has in the basal part the usual dots, 2 in cellule 7 and 1—3 in the cell. The species is very variable and the forms intergrade without any sharp dividing-line. — **penelope** Stgr. (57 b). Wings thickly scaled, ground-colour black; the spots in cellules 1 b—3 of the forewing small, free, rounded, red or reddish, the one in 3 often absent; those in cellules 4—6 are also small and form a sharply defined, whitish transparent subapical band; hindwing with narrow red median band, beneath light yellow with thick black streaks proximally often united on the veins. Specimens in which spots 1 b and 2 are larger, lighter and more or less transparent constitute transitions to the following forms. Congo and Uganda. — ♀-ab. **argentea** Eltr. Spots transparent and continuous, forming a transverse band, which, however, does not entirely cover the base of cellules 3—6; those in cellules 1 b and 2 proximally tinged with reddish; median band of the hindwing red-yellow, about 5 mm. in breadth; dark marginal band of the upper surface with distinct black longitudinal streaks; under surface except in the middle with silver-grey ground-colour. Uganda. ♀-ab. **exalbescens** Eltr. resembles the type-form in pattern, but all the red markings are replaced by yellowish white and the marginal band on the upper surface is as broad as in *argentea*, 3—4 mm. Ground-colour of the under surface yellowish white. Uganda. — ♀-ab. **sulphurescens** ab. nov. closely approaches the preceding form; spots 1 b and 2 of the forewing elongate-rounded, thinly scaled with yellowish, 3—6 diaphanous; median band of the hindwing above about 5 mm. in breadth, of exactly the same colour as in *servona*; under surface coloured quite as in *servona*. Very like a small *A. servona*; but the cell of the forewing without light spot and the marginal streaks on the under surface abbreviated and distally pointed as in *penelope*. Uganda: Sesse Islands. — ♀-ab. **penella** Eltr. Forewing above at the base reddish almost to the apex of the cell, then with a hyaline median band about 5 mm. in breadth, which, however, does not cover the base of cellules 4—6, so that there is a blackish spot at the end of the cell; marginal band black-brown, about 2 mm. in breadth. Hindwing above only narrowly darkened at the base and with narrow marginal band, only 2 mm. in breadth, the red-yellow median band consequently much widened, in the middle about 10 mm. in breadth; hindwing beneath strongly suffused with reddish in the basal half and with much lighter median band. Uganda. — **vitrea** Eltr. Forewing above black with sharply defined diaphanous transverse band about 4 mm. in breadth, which does not fully reach the base of cellules 2—6 and is tinged with reddish in 1 a and at the proximal side of the spots in 1 b and 2; the hindwing with red-yellow median band about 7 mm. in breadth and black marginal band about 2 mm.; under surface as in the type-form with the ground-colour light yellow. British East Africa. — **derubescens** Eltr. (57 b; as *peneleos*). Forewing above almost as in *vitrea*, the diaphanous spots, however, often reaching the base of cellules 2—6; hindwing with bright red median band, only 4.5 mm. in breadth, and black marginal band 5 mm. in breadth, hindwing beneath light greenish at the base and the distal margin, light yellow in the middle. Togoland. — **translucida** Eltr. (60 a) differs from the other forms in having the forewing diaphanous and only at the margins and the base narrowly blackish (♂) or dark grey (♀); hindwing in the ♂ almost as in the type-form, but with red-yellow median band 7 mm. in breadth, in the ♀ very little darkened at the base and with grey marginal band, not sharply defined, hence almost the entire upper surface light reddish yellow. Lagos.

*pelopia*. **A. pelopia** Stgr. is nearly allied to the two following species, but differs from *peneleos* in having the ground-colour of the hindwing beneath uniform yellowish, not or but little darkened at the base and the distal margin, and the rays on the interneural folds much longer and with the proximal ends quite free; in addition the darkening of the veins on the under surface of the hindwing is much thickened into black knobs at the distal margin, which does not occur in *peneleos*, or only in a slighter degree. By this character and the longer streaks on the under surface *pelopia* can also be distinguished from *parrhesia*, to which it is very similar above. Viewed directly from above the forewing is semitransparent with black apex and margins and veins 2—4 broadly edged with black, but when looked at very obliquely from the inside it appears quite black with a reddish longitudinal streak in 1 b, a small, rounded red-yellow spot in 1 b, 2 and 3 near to the distal margin and diaphanous spots in 4—6; hindwing red-yellow above, darkened at the base as far as veins 2 and 5 or 6, with distinct black dots and often with free black dot in 2, 5 or 6; marginal band narrow, about 2 mm., black; hindwing beneath slightly tinged with grey-greenish at the base, at the distal margin only somewhat darkened by the marginal band of the upper surface showing through. ♀ unknown to me. Congo; rare. — **tropicalis** Blach. apparently only differs in having the under surface of the hindwing somewhat darker with the veins less strongly thickened and quite evidently belongs to this species. Ogowe.



**A. peneleos** may be most easily known in all its forms by the underside of the hindwing having a sharply defined light median band, the proximal ends of the longitudinal streaks in the distal part being joined by a brownish lunate line, which bounds the median band distally, while proximally it is bordered by the sharply defined and always darkened basal area; the veins and streaks on the under surface are not or little thickened and of uniform breadth. — **peneleos** Ward (57 b; 1st fig.). In the ♂ forewing the scaling is as in *pelopeia* ♂, with rounded, light reddish-scaled spots in 1b and 2 and a streak of the same colour in 1a; hindwing above blackish with a red to red-yellow median band about 7 mm. in breadth, which is distally rounded, and a marginal band 2—3 mm. in breadth; forewing beneath with the ground-colour grey-yellow to light yellow at the distal margin; hindwing beneath only slightly darkened at the base, its marginal band much broader than above, 4.5 mm. in breadth. The ♀ differs much from the ♂; the basal part of the forewing is semitransparent light yellow-brown as far as the apex of the cell and vein 3, with an elongate dark spot in the cell and often also a rounded dark spot beyond the cell in the basal part of cellules 4—6; apex and marginal band lighter than in the ♂; hindwing above yellow-brown to the base, with free black dots, the discal dots often all present; marginal band scarcely more than 1 mm. in breadth, proximally dentate at the veins; forewing beneath diaphanous with yellow marginal band; hindwing beneath with light yellow median band 3 mm. in breadth behind the discal spots, in the basal area and at the distal margin darker, grey-yellow; the lunate line connecting the proximal ends of the marginal streaks as distinct as in the ♂. Sierra Leone to the Congo. — ♀-ab. **helvimaculata** Eltr. only differs from the typical ♀ in having the forewing diaphanous almost to the base, with very faint reddish tinge, while the upperside also of the hindwing has behind the discal dots a whitish median band 3 mm. in breadth, divided by the reddish veins. Lagos. — ♀-ab. **lactimaculata** Eltr. (60 a). Wings entirely without red or brown markings; base of the forewing suffused with black-grey at least as far as vein 2. Hindwing on both surfaces dark grey in the basal area and at the distal margin, with white median band, beneath somewhat lighter than above. Fernando Po. — ♀-ab. **sepia** Eltr. Forewing semitransparent with black-brown margins, traces of whitish spots in 1b and 2; hindwing above black-brown, with some red scales at the apex of the cell and the proximal side of the marginal band; inner margin yellowish; forewing beneath yellowish at the margins; hindwing beneath grey-yellow with whitish median band. Fernando Po. — **pelasgius** Smith is the eastern race, though it also occurs in West Africa as an aberration among the type-form; it is distinguished by having the basal area and the broad marginal band on the underside of the hindwing dark tawny, so that the light yellow median band stands out very sharply. Congo to Uganda; also as aberration in the Cameroons to Angola. — **gelonica** Rothschild & Jordan differs from *pelasgius* in the more transparent forewing and the chestnut-brown ground-colour of the hindwing beneath. Abyssinia. — Larva dark brown with blackish, yellow-edged transverse dorsal streaks, yellow lateral lines and red-brown head; the spines black.

**A. parrhasia** F. (57 a, 59 c) is so similar in the male to the preceding species that it is sufficient to mention the differences. Forewing semitransparent only at the margins, at the base and on the veins with dense blackish scaling, in 1b and in 2 an elongate, reddish-scaled spot; the spot in 1b is often continued towards the base as a reddish stripe; the cell usually with two separated reddish spots; spots in cellules 3—6 diaphanous; on the underside of the forewing the margins and the median are scaled with yellow; the under surface of the hindwing is almost uniform yellow without dark marginal band and with the proximal ends of the marginal streaks free. The ♀ is similar to the ♂, but has the forewing more obtuse with more indistinct and more elongate reddish spots and with whitish-scaled spots in cellules 4—6, it differs from *peneleos* ♀ in the absence of the dark marginal band on the underside of the hindwing. Larva brown with very long black spines and light lateral line. Pupa light-coloured with the normal black markings; dorsal spots on the abdomen broadly separated, quadrate with light median dot; segments 2—7 with well developed obtuse projections. Sierra Leone to the Cameroons. — ♀-f. **oppidia** Hew. (57 a) has the red spots of the forewing more distinct and the whitish spots in cellules 4—6 more sharply defined. Fernando Po. — ♀-f. **parrhoppidia** Stgr. The cell and cellules 1b and 2 of the forewing almost entirely red; spots 4—6 diaphanous. Cameroons. — ♀-f. **leona** Stgr. (= *leonina* Baker). Forewing except at the margins almost diaphanous; hindwing above yellow-brown to the base, next to the narrow marginal band lighter yellowish; under surface as in the type-form but much lighter; is similar to the ♀ of *peneleos* but more transparent and easy to recognize by the underside of the hindwing. Sierra Leone.

**A. grosvenori** Eltr. (60 b) approximates to the preceding species in size and shape. Forewing above entirely blackish and only in the cell and in place of the spots slightly transparent; hindwing above at the base to veins 2 and 7 black, then brick-red with very narrow dark marginal line and very fine streaks on the interneural folds, beneath uniform orange-yellow with a few small black dots at the base and long streaks at the distal margin on the folds, but the veins scarcely edged with black. Eastern Congo region.

**A. newtoni** E. Sharpe. Forewing blackish with a rounded whitish spot in 2 and a whitish subapical band in 4—6; hindwing blackish above, just beyond the apex of the cell with a red-yellow median band, of a uniform breadth of 3 mm., which does not quite reach the inner margin, beneath greenish light grey with black dots as far as the apex of the cell, otherwise as above. Island of São Thomé; only one ♂ known.

**A. safie** Fldr. (57 b) is a small, very distinct species. Both wings densely scaled, black-brown above; *safie*.



the forewing with three white subapical spots in 4—6 and a yellow spot in 1 b and in 2, the hindwing with a narrow yellow median band, more or less broken up into spots; on the under surface the forewing is black with sulphur-yellow marginal band striped with black and light discal spots as above; the ground-colour of the hindwing beneath is a lighter or darker yellowish, with or without indication of a median band; black basal dots reduced; marginal streaks fine, occasionally at the proximal end with punctiform thickening. *Abys-  
antinorii*. sinia. — f. **antinorii** Oberth. only differs in having the median band on the upperside of the hindwing absent or incomplete. Abyssinia.

**A. orina.** This species differs from the nearly allied *parrhasia* in having the forewing fully scaled, with sharply defined red markings. Forewing black above with a long red stripe in the cell and in 1 b and red discal spots in 2—6 or at least in 2. Hindwing black above with broad red median band, which only covers the extreme apex of the cell, or in the ♀ red to the base with black dots. Under surface of the forewing to beyond the middle reddish, then yellowish, with black veins and thick black streaks; hindwing with yellow ground-  
*orina*. colour, large black dots in the basal area and thick black streaks on the interneural folds. — **orina** Hew. (= *orinata* Oberth. 57 a). Forewing with red (♂, ♀) or white (♀) discal spots in cellules 3—6. Sierra Leone to the Congo. — f. **nigroapicalis** Auriv. Forewing without light spots in cellules 3—6. Cameroons to Uganda. *orina* (57 a) is a transitional form with red spot only in 3. — **orineta** Eltr. is the eastern race and is characterized by having the red markings of the forewing more extended and the basal area on the hindwing above black in the ♀ also; the light spots in cellules 4—6 of the forewing in the ♀ are sometimes whitish, sometimes red as in the ♂. Uganda, as aberration also in West Africa.

*buschbecki*. **A. buschbecki** Dew. (57 a). Forewing black above, with the same red spots as in *orina*, but with the stripe in 1 b divided by a black spot in the middle and the cell with an elongate black spot; the spot in 3 is small and placed in or behind the middle of the cellule; under surface as above, but spots 3—6 yellow instead of red and the marginal band striped with yellow. Hindwing above red to the base with black dots, or somewhat darkened at the base, at the distal margin with sharply defined marginal band about 2 mm. in breadth, beneath with yellow ground-colour and black marginal band, which encloses two small yellow dots in each cellule. Cameroons to the Congo; rare.

*cinerea*. **A. cinerea** Neave. Forewing diaphanous without a trace of definite spots, at the costal margin and at the apex more or less dusted with grey. Hindwing above uniform black, beneath at the base with a large dark red area, which extends to the apex of the cell and the inner margin; basal dots feebly developed; forewing beneath dark red at the base of the costal margin. British East Africa: Tiriki Hills (5000 ft.). — *alberta*. **alberta** Eltr. (60 c) differs in the hindwing having above a large, elongate carmine-red spot, which covers the base of cellules 7—2, the middle of cellule 1 c and the apex of the cell. To the west of Lake Albert Edward.

*orestia*. **A. orestia** Hew. (56 g). Forewing diaphanous, at the margins and veins and at the base dark-scaled, cellules 1 a and 1 b to beyond the middle, the base of cellule 2 and usually also a small spot in the cell light orange-yellow to red. Hindwing on both surfaces light orange-yellow with black basal dots and fully developed discal dots and with a sharply defined grey or black semitransparent marginal band. Nigeria to An-  
*transita*. gola and Uganda. — ab. **transita** Eltr. Forewing without reddish scaling; hindwing instead of the red colour  
*humilis*. yellow or white. Uganda and Tiriki Hills. — **humilis** E. Sharpe. Both wings transparent without red or yellow scales and above almost alike; the hindwing beneath at the base with some small black dots, which are not visible above; the discal dots are wanting. A very degenerate form. Uganda and Tiriki.

*quirinalis*. **A. quirinalis** Smith is very similar to the preceding species, but has a sharply defined red-yellow basal area on the upperside of the forewing, reaching the apex of the cell and vein 3 and enclosing a black longitudinal streak in the basal part of the cell; the red-yellow colour on the forewing quite the same as that of the hindwing; marginal band of the hindwing distinctly broader than in *orestia*, about 4 mm. in breadth. Eastern Congo district; Uganda; German and British East Africa.

*igola*. **A. igola** Trim. is very similar to the two preceding species, but the marginal band of the hindwing is not transparent and the cell is unspotted. Basal half of the forewing as far as the apex of the cell and vein 3 bright orange-yellow without spots; costal margin dusted with black to the base, apex, marginal band and veins 3—6; cellules 3—6 otherwise diaphanous; hindwing orange-yellow above with black dots and black marginal band 2—2.5 mm. in breadth; the red-yellow colour on the under surface much paler than on the upper; streaks on the interneural folds short, not reaching the distal margin. In the ♀ the ground-colour is lighter, light ochre-yellow to cream-yellow and the marginal band not sharply defined. Zululand to German East  
*maculiventris*. Africa. — ♀-f. **maculiventris** Sm. & Kirby has a duller, more brown-yellow ground-colour and the marginal band on the upperside of the hindwing not sharply defined, sometimes broader, sometimes narrower; beneath the hindwing is sometimes coloured as above, sometimes chocolate-brown at the base as far as the discal spots, and then light reddish to the red-brown marginal band. Among the type-form.



**A. strattipocles** Oberth. (56 f) is very similar to *A. igola*, but has the discal dots of the hindwing much *strattipocles*. larger and completely developed and its inner margin whitish. Madagascar.

**A. masamba** Ward (56 g) closely approximates to the two preceding species, but the red-yellow scaling *masamba*. of the forewing is less extended, leaving the apex of the cell free and covering at most the base of cellule 2; it is much paler in the ♀ than in the ♂; the hindwing as in *strattipocles* with large discal dots; the distal black dot in the cell is placed more basally before the origin of vein 2; in the ♀ the ground-colour of the hindwing is often whitish. Madagascar. f. **silia** Mab. (56 g) only differs in having the reddish colour of the upper surface *silia*. more yellowish and behind the discal spots of the hindwing more or less whitish; the sexes almost alike. Madagascar. f. **boseae** Saalm. (56 g) is smaller, with the ground-colour of the upper surface light yellow. Mada- *boseae*. gascar.

**A. sambavae** Ward is very similar to the last two species, but has a more brownish red colour on the *sambavae*. upper surface and differs especially in having the marginal band of the hindwing replaced by large black spots at the extremities of the veins; these spots touch one another at the distal margin, but are otherwise quite free; the inner margin of the hindwing broadly whitish yellow. Madagascar.

**A. aubyni** Eltr. (60 a). Basal part of the forewing above reddish; the red colour covers the cell to its *aubyni*. apex, cellules 1 a to 2 almost to the distal margin and the base of cellule 3; the apical part is blackish with three short whitish transparent spots in 4 to 6. Hindwing above light red nearly to the base with free black dots and a sharply defined black marginal band 2 mm. in breadth; beneath light ochre-yellowish, at the distal margin with short, fine streaks on the folds, which do not quite reach the margin. British East Africa.

**A. conradti** Oberth. (56 f) differs from all the preceding similarly coloured and marked species in having *conradti*. the apical half of the forewing densely scaled without vitreous spot in 3 but with sharply defined white spots in 4 to 6 and especially in having the veins of the hindwing beneath broadly black at the distal margin and the streaks short and thickened, coniform. Nyassaland and German East Africa.

#### Fifth Subgroup.

Large species, characterized by the entire absence of the black dots in cellules 5 to 7 of the hindwing. Cellules 5 and 6 are occasionally without dots also in the species of the preceding subgroups, but these have always 1 or 2 black dots in cellule 7. The forewing is at least for the most part diaphanous, at the apex and distal margin often more or less darkened, and has two, sometimes very indistinct, dark transverse bands, the first running from the costal margin through the cell to vein 1 a near the hinder angle and the second beyond the cell from the costal margin to vein 3 and sometimes united with the broadly darkened discocellulars. Hindwing with basal dots in 1 a to 1 c, two dots in the cell and discal dots in 1 b to 3 and occasionally also in 4, that in 3 placed much nearer to the distal margin than the others.

**A. vesperalis** Smith (56 f). Forewing broadly darkened at the apex and distal margin, semitransparent *vesperalis*. and with distinct dark transverse bands. Hindwing above light ochre-yellow with black-brown marginal band about 4 mm. in breadth, beneath dark ochre-yellow with long dark streaks on the interneural folds. Sierra Leone to the Congo and Uganda. — **catori** Beth. Baker. Ground-colour of the hindwing light yellow. Sierra *catori*. Leone.

**A. pentapolis** has the hindwing hyaline or transparent at the costal margin, in cellules 5 to 7 as far as the cell and in 1 c to 4 at the distal margin; thus only the cell, cellules 1 a to 2 nearly to the distal margin and the base of cellule 3 (and 4) are scaled; the marginal streaks are often only distinct in cellules 1 c to 3. Larva dark umber-brown above with a white spot at each side on segments 4 to 12; head red-brown. Spines black, the one on segment 2 elongated. Pupa whitish with black markings; abdomen dorsally with short, obtuse elevations. — **pentapolis** Ward (56 e). Transverse band of the forewing dull and little distinct; scaling of the hindwing *pentapolis*. very thin, pale yellow to whitish. Sierra Leone to the Congo and Uganda. ab. **thelestis** Oberth. (56 f). Sea- *thelestis*. ling of the hindwing red-yellow. Among the type-form. — **epidica** Oberth. (56 f). Transverse band of the fore- *epidica*. wing deep black and sharply defined, often much widened; scaling of the hindwing lemon-yellow; distal margin of both wings often broadly darkened. German East Africa.

#### Sixth Subgroup.

In the distinct free basal and discal dots of the forewing the species which belong here differ from all the others in the first group and consequently agree with most of those of the second. The three species are very distinct and can be easily separated by the characters given in the following synopsis.

#### Synopsis of the Species.

- I. Both wings without submarginal dots. Discal dot 1 b of the forewing is placed obliquely distad to discal dot 2.



α. Discal dot 4 of the hindwing is placed somewhat nearer to the distal margin than the rest and forms an almost regular curve with discal dots 2, 3, 5 and 6. *A. encedon*.

β. Discal dot 4 of the hindwing is placed nearer to the base than discal dots 3 and 5.

*A. pharsalus*.

II. The hindwing at least in 1 c to 3, the forewing in 1 b and 2, with large submarginal dots. Discal spots 1 b to 3 on the forewing stand in a straight line. *A. rogersi*.

**A. encedon** is a very variable and widely distributed species and appears in many forms but with no definite local races. The black dots are the same in all the forms and are arranged as follows. Forewing: 1 or 2 basal dots in 1 b; a transverse spot in the cell; discal dots in 1 b to 6, of which that in 1 b is often double and always placed much nearer to the distal margin than the one in 2; in the forms with black apex discal dots 3 to 6 on the upper surface are indistinct against the dark ground-colour. Hindwing: basal dots in (1 a), 1 b, 1 c and 7; 1 or 2 dots in the cell; one dot each in the basal angle of cellules 4 and 5 and discal dots in 1 b to 7, of which the one in 3 or 4 is placed nearer to the distal margin than the rest and the one in 2 nearer to the base than that in 1 b. The hindwing above has a narrow black or blackish marginal band 1 to 2 mm. in breadth, beneath the streaks on the interneural folds are often red-yellow instead of black. Throughout *encedon*. Africa south of the Sahara and Madagascar. — **encedon** L. (56 e). The apical half of the forewing above blackish with white subapical band composed of 5 or 6 spots in cellules 3—6 (9, 10); ground-colour otherwise red-brown to yellow-brown, beneath somewhat lighter. — f. **infuscata** Stgr. only differs from *encedon* *alcippina*, in the smoky brown ground-colour. — f. **alcippina** Auriv. has the hindwing in the middle more or less extended white, but otherwise agrees with the type-form. — f. **sganzini** Bdv. (56 e). Markings as in the type-form, but ground-colour straw-yellow to clay-yellow and marginal streaks on the underside of the hindwing usually black; marginal band on the upperside of the hindwing often widened and not sharply defined. Occurs *lycia*, especially on Madagascar. — f. **lycia** F. (56 e) is very similar to f. **sganzini**, but has a white or whitish ground-colour; occasionally the basal half of the forewing is smoky black-grey on both surfaces and on the upperside *fumosa*, only a little lighter than the apical half, ab. **fumosa** ab. nov. A specimen with 3 black dots in the cell of the *ascrepticia*, hindwing was named **ascrepticia** (!) by STRAND. — The following forms differ from the preceding in having the apical half of the forewing above not or scarcely darker than the basal half, with distinct black discal dots. *necoda*. — f. **necoda** Hew. (56 e). Ground-colour of both wings light grey; forewing with whitish subapical band. — *daira*. f. **daira** Godm. & Salv. Ground-colour of both wings light brown-yellow; the subapical band of the forewing *radiata*, absent or only indicated by light yellowish spots. — f. **radiata** Auriv. only differs from *daira* in having the extremities of the veins above broadly and triangularly edged with black and the posterior half of the hindwing whitish. Adamaua. — Larva slate-black with yellow lateral line, small white and yellow dorsal spots edged with black, and black spines; head black. Pupa white with the usual black markings. The larva lives on Comelina. — The agreement in colour and markings between the forms of *Acraea encedon* and those of the much larger *Danaida chrysippus* and *dorippus* is very remarkable. Compare *A. encedon* and *D. chrysippus*, *A. alcippina* and *D. alcippus*, *A. daira* and *D. dorippus*, *A. radiata* and *D. dorippus* ab. *albinus*.

*pharsalus*. **A. pharsalus** Ward. (56 d). Upper surface of both wings dusted with black at the base; forewing above very broadly black at the apex and distal margin with small whitish (occasionally reddish) subapical spots in 4 to 6 and large discal dots in 1 b to 6, of which those in cellules 4 to 6 are scarcely distinguishable from the ground-colour; cell with a black spot in the middle and one at the apex; the middle of the forewing and the greater part of the hindwing above red, the hindwing with black marginal band; forewing beneath reddish grey, at the apex and distal margin yellowish with black veins and marginal streaks; hindwing beneath at the base and distal margin greenish light grey, in the middle slightly reddish with well developed basal and discal dots and large triangular spots at the distal margin on the interneural folds. — Larva above red-yellow, beneath lighter, with black dorsal line and small black striae at the anterior and posterior margin of each segment; head and spines black. Pupa light yellowish with black markings. Senegal to Angola, Nyassaland and Uganda. — **pharsaloides** Holl. (= *saluspha* Suff.) is the East African race and only differs in having the light subapical band of the forewing much larger and red, connected with the red ground-colour by a spot of the same colour in 3; hence the black discal dots in cellules 3 to 6 appear as independent spots; the base of both wings above is less dusted with black than in the type-form. In the ♀ the ground-colour of *pallidepicta*, the upper surface is often grey-yellowish. Angola, German and British East Africa. — ab. **pallidepicta** Strand. *nia*. Subapical band of the forewing whitish. German East Africa. — ab. **nia** Strand forms in certain respects the transition to *vuilloti*, as the hindwing has a light yellowish patch in the same position as in the latter. *vuilloti*. German East Africa: Amani. — **vuilloti** Mab. (56 d). The ground-colour of the forewing is often completely broken up into spots and the hindwing has a large white spot at the inner margin in cellules 1 b to 2 (to 3). Hindwing also beneath with dark marginal band. Marginal streaks thick, but not triangular. German East *rhodina*, Africa. — **rhodina** Rothsch. Forewing as in *vuilloti*; hindwing also similarly marked, but without white area. Abyssinia.

**A. rogersi** is characterized by the presence of black submarginal dots at least in cellules 1 b and 2 of both wings. The forewing has a basal dot in 1 b, a black spot in the cell, one at its apex and large dis-



cal dots in 1 b to 6, of which those in 1 b to 3 are placed in a straight line running parallel with the distal margin. The upperside of the hindwing is usually so much darkened at the base as far as the apex of the cell that the basal dots are not distinct, and has a broad black marginal band; beneath there are basal dots in 1 a to 1 c, 7 and 8 and two in the cell; the discal dots are usually present in all the cellules, but are irregularly arranged, the spots in 1 c and 4 being placed nearer to the base than those next to them, a black dot on the middle discocellular; the submarginal dots are placed just before the marginal band and occur in the ♀ in cellules 1 b to 7, in the ♂ often only in 1 b to 3. — *rogersi* Hew. Black above with a transverse band 8 to 9 mm. in breadth on the hindwing and a large spot at the hinder angle of the forewing in cellules 1 a to 2 in the ♂ red or red-yellow, in the ♀ only indistinctly reddish. Sierra Leone to Angola. — *salambo* Sm. (56 d). Both wings smoky brown above, more or less broadly relieved with yellowish grey in the middle. Among the type-form, — *lamborni* Eltr. is similar to the preceding form, but has a dirty cream-coloured transverse band on the upperside of the hindwing. Larva black-brown with black spines and black head. Pupa light yellowish brown with fine black striae; head with two long, obtuse, divergent horns. Lagos.

#### Addendum to the First Group.

The following quite isolated species I cite as an addendum to the first group. The underside of the hindwing has on the interneural folds fine indistinct black lines, which, however, do not reach the distal margin by some distance, at the distal margin itself they are reddish, but without forming separate marginal spots. On the upper surface of the hindwing, on the other hand, there are large, rounded marginal spots, distinctly bounded by the black veins and a submarginal line, but of exactly the same colour as the ground of the upper surface.

**A. amicitiae** Heron (= *polyehroma* Rebel) (59 f). Forewing above black in the basal half with 5 large, angular brown-red spots, two in 1 b, two in the cell and one in the middle of cellule 2, and in the apical half with three small diaphanous spots in 4 to 6. Hindwing above brown-red, in the basal part of cellules 1 a to 2 as far as vein 3 black and with free black discal dots in (4) 5 to 7; before the distal margin with a thick black submarginal line, which is connected with the distal margin by the black veins; on the under surface the basal part as far as the discal dots and the marginal band are dull grey-brown and the interspace forms an anteriorly widened light grey-yellow median band; basal and discal dots all free. Ruwenzori and in the mountainous country at the north-west end of Lake Tanganyika.

#### Second Group.

This group embraces the majority of the Ethiopian Acraeids and may be divided into several subgroups. I have retained almost unaltered the subgroups of my work *Rhopalocera Aethiopica*, although some species have been discovered later, which cannot be fitted in to these without difficulty. ELTRINGHAM has erected a large number of smaller groups, which, however, are not characterized and hence cannot be employed here. In his key, on the other hand, he has retained the following subgroups almost unaltered.

#### Synopsis of the Subgroups.

I. Forewing completely scaled, very rarely partially diaphanous beyond the middle with the distal margin spotted. Underside of the hindwing in this case with free, not confluent basal dots.

A. Hindwing beneath at the distal margin with a light spot in each cellule, proximally dark-bordered, or with broad black, light-spotted marginal band.

α) The light, often triangular or elongate marginal spots on the underside of the hindwing are bounded at the sides and proximally by two obliquely placed, straight or curved dark streaks proximally convergent or often even united, usually not joined to the black veins. When these streaks are curved, thickened and united with the veins, the marginal band is very similar to those of the following subgroups. In this case, however, the species of the present group may be known by the forewing being without discal dots.

##### First Subgroup.

β) The light, rounded or quadrate to transverse marginal spots on the underside of the hindwing are bounded proximally (and at the sides) by a straight or curved, sometimes much thickened, transverse line. In the latter case the transverse line may be widened into a broad marginal band, quite enclosing the reduced spots.

\*. The basal dots on the underside of the hindwing separated.

1. Forewing beneath without dark streaks on the interneural folds or occasionally with short streaks, which, however, are far removed from the distal margin.



- a) Discal dot 1 b of the forewing is placed almost directly behind discal spot 2, so that a line drawn through these dots would be vertical to the hindmargin and would scarcely if at all touch the cell\*. Second Subgroup.
- b) Discal dot 1 b of the forewing is placed so obliquely distad behind discal spot 2 that a line drawn through these dots would intersect the hinder angle and the cell and would stand almost vertically to the costal margin\*. Third Subgroup.
- 2. Forewing beneath with distinct black streaks, reaching the distal margin, on the interneural folds. Fourth Subgroup.
- \*\* The basal dots on the underside of the hindwing united into a black, white-spotted basal area. Fifth Subgroup.
- B. Hindwing beneath at the distal margin without sharply defined light marginal spots, only with black marginal line or even with light marginal band. Sixth Subgroup.
- II. Forewing at least beyond the middle transparent, hyaline or smoky without markings; occasionally before the apex and at the distal margin with light spots, but the underside of the hindwing in this case black at the base with white dots.
- A. Hindwing at the distal margin completely scaled and more or less spotted. Seventh Subgroup.
- B. Hindwing at the distal margin incompletely scaled to a greater or less extent; transparent to hyaline, rarely smoky, without markings or only darkened at the extremities of the veins. Eighth Subgroup.

### First Subgroup.

The peculiar pattern at the distal margin of the hindwing beneath which characterizes this subgroup may also be described as consisting of dark streaks on the interneural folds which fork towards the distal margin and enclose a light spot (cf. the under surfaces pl. 56 a—d). Very rarely, as in the ♀ of *allhoffi*, the same markings occur above also. In all the typical species the basal and discal dots of the forewing are wanting or are present only in 1 b and 2 as small free dots. In the last two, very aberrant species, which form a transition to the second subgroup, on the other hand, the discal dots of the forewing are completely developed. With regard also to the markings of the hindwing beneath these species seem more primitive and can only be regarded as outliers of this subgroup.

### Synopsis of the Species.

- I. Cellules 4 to 6 of the forewing without free discal dots, but often with an oblique transverse band, which usually connects the costal margin with the marginal band and separates off a light subapical band.
  - A. The discal dots on the underside of the hindwing never united into a continuous transverse line from the costal to the inner margin.
    - a) The cell of the forewing above entirely black or with a light spot near its apex or light-coloured along its posterior side or occasionally almost entirely light, in which case, however, veins 3 and 4 of the hindwing arise from a point or are short-stalked and the base of the hindwing is black above.
      - \*. The light marginal spots on the underside of the hindwing 4 to 5 times as long as their breadth at the distal margin, streak-like or narrowly coniform, and in their distal half of almost uniform breadth. *A. althoffi*.
      - \*\* The light marginal spots on the underside of the hindwing triangular or rounded, at most twice as long as their breadth at the distal margin.
        - §. The hindwing beneath at the base with 17 or 18 rounded, separate black dots on a yellowish ground and without red or yellowish streaks between the dots; the latter quite distinct above also. The markings of the upper surface light ochre-yellow. Median band on the upperside of the hindwing narrow (4 to 5 mm. in breadth) and of almost uniform breadth. *A. oberthueri*.
        - §§. The hindwing beneath in the basal part at most with 12 to 14 black dots, which are more or less confluent or joined by red to yellowish streaks. Median band on the upperside of the hindwing bulging or in cellules 4 to 5 widened.
          - †. Veins 3 and 4 of the hindwing from the same point and short-stalked. Hindwing above at the base black or blackish at least as far as vein 2. Discal dots 4 to 6 of the hindwing absent.
            - 0. Forewing above as far as vein 2 unicolorous black without light markings. The large light hindmarginal spot of the forewing with its proximal edge almost straight. The spot in 1 b rectangular and as broad at vein 1 as at vein 2.

\* If one or both of dots 1 b and 2 are absent the species must be looked for both in the second and third subgroups.

1. The proximal angle of cellule 2 of the forewing completely covered by the light hindmarginal spot.
  - a) All the markings of the upper surface yellow-red. Expanse 30 to 35 mm.  
*A. uvui.*
  - b) All the markings of the upper surface light yellow. Expanse 48 to 50 mm.  
*A. viviana.*
2. The proximal angle of cellule 2 of the forewing black. Markings of the upper surface light yellow.  
*A. karschi.*
00. Forewing above in the basal part, usually at the median vein, more or less broadly light. The hindmarginal spot of the forewing is irregularly defined proximally and is often continued along the median towards the base.
  1. The proximal angle of cellule 2 of the forewing above completely covered by the light hindmarginal spot.
    - a) Hindwing beneath at the base with a red streak or spot between the black dots at least in the cell and in cellule 8.  
*A. cabira.*
    - b) Hindwing beneath at the base without red streaks between the black dots.  
*A. alicia.*
  2. The proximal angle of cellule 2 of the forewing above black or with a black dot.
    - a) The red-yellow longitudinal stripe on the median of the forewing above is broadly and completely joined to the hindmarginal spot.  
*A. bonasia.*
    - b) The red to red-yellow longitudinal stripe on the median of the forewing above is separated from the hindmarginal spot or only narrowly and incompletely joined to it.  
*A. sotikensis.*
- ††. Veins 3 and 4 of the hindwing widely separated. The base of the hindwing above not or but very little black; the black colour does not reach vein 2. Cell of the forewing above with a light spot near the apex, but otherwise black. Hindwing beneath in the basal area with red streaks between the black dots.
  1. Forewing with light subapical band.  
*A. acerata.*
  2. Forewing without light subapical band.  
*A. pullula.*
- b) The cell of the forewing above entirely light or only with a black dot and at the apex somewhat darkened; rarely semitransparent or smoke-coloured, like cellules 1 a to 3. Veins 3 and 4 of the hindwing at their origin more or less broadly separated. The light (usually red-yellow) ground-colour of the forewing almost entirely covers the base of cellules 1 a and 1 b.
  - \*. Hindwing beneath with 2 or 3 black dots in the cell, above light at the base with free black dots.
    1. The light marginal spots on the underside of the hindwing proximally rounded, semi-elliptical. Forewing with broad, usually red-yellow, continuous subapical band, which is occasionally united with the ground-colour.
      - a) Marginal band on the underside of the hindwing proximally sharply defined, uniform black without streaks or light dots, only with the usual marginal spots.  
*A. lumiri.*
      - b) Marginal band on the underside of the hindwing in addition to the marginal spots with light submarginal dots or proximally very irregularly defined and deeply incised at each vein.  
*A. terpsichore.*
    2. The red-yellow marginal spots on the underside of the hindwing sharply triangular. The forewing red-yellow as far as the apex of the cell, then black or blackish with three small whitish semitransparent subapical spots in 4 to 6.  
*A. fornax.*
  - \*\*.
- \*\*. Hindwing beneath at most with one black dot in the cell. The marginal spots on the underside of the hindwing small, broader than long, light yellow to whitish, proximally continued by a long, broad red stripe edged with black. The hindwing above at the base black as far as vein 2 and with broad, black, unspotted or indistinctly spotted marginal band.
  1. Markings of the upper surface red-yellow.  
*A. goetzei.*
  2. Subapical band of the forewing and median band of the hindwing lemon-yellow.  
*A. excelsior.*
- B. The discal dots on the underside of the hindwing complete, streak-like, and united into a transverse line, which runs from the costal to the inner margin, touches the apex of the cell and distally bounds the basal area.  
*A. mirabilis.*
- II. Forewing in cellules 4 to 6 with free black discal dots. Discal dots 1 b to 4 or 5 of the hindwing stand in a nearly straight transverse line beyond the apex of the cell and discal dots 6 and 7 form almost a right angle with this line. The marginal spots on the underside of the hindwing whitish, broader than long and proximally incomplete, or not bounded by black streaks.



- a) The light marginal spots proximally bordered by two short, very obliquely placed black streaks, which, however, do not touch in the middle. At the opening of these streaks there is usually a broad reddish stripe. Ground-colour of the upper surface red-yellow to brown-yellow to grey.

*A. zitja.*

- b) The light marginal spots on the underside of the hindwing proximally not or very indistinctly bordered with black. Before them are placed on the interneural folds broad orange-yellow longitudinal streaks, which in cellules 1b to 4 are basally bounded by a black transverse line. Ground-colour of the upper surface sand-yellow to cream-yellow.

*A. rahira.*

*althoffi.* **A. althoffi** *Dew.* (56 d) is much larger than the other species of the subgroup and differs from them all in the shape of the light marginal spots on the underside of the hindwing (cf. the synopsis). Forewing black above with a distally widened longitudinal stripe in the cell, a subapical band and a narrow hindmarginal spot in cellules 1a to 2 red in the ♂, white in the ♀; the subapical band consists of 4 spots in cellules 3 to 6; the hindmarginal spot is about 6 mm. in breadth. The upperside of the hindwing black (♂) or black-grey with a narrow median band, which in the ♂ is only 3 to 4 mm. in breadth and sulphur-yellow to whitish yellow, but in the ♀ 9 to 10 mm. in breadth and white. The under surface with almost the same markings as above but with distinct basal and discal dots on the hindwing and long black streaks in the distal part. Congo to Uganda. — f. **rubrofasciata** *Auriv.* differs in the red median band of the hindwing. Cameroons and Congo. — ♀-f. **telloides** *Eltr.* is quite unlike the typical ♀, but bears a strong resemblance to *Planema tellus* (58 a). The basal half of the wings is dull orange-yellow nearly to the apex of the cell, the orange-yellow colour covering not only the greater part of cellules 1a and 1b and the base of cellule 2 as in *Pl. tellus*, but also almost the whole of the cell; the subapical band is light ochre-yellow and consists of 4 spots, the one in 3, as in *Pl. tellus*, placed nearer to the distal margin. Hindwing above dull orange-yellow to the base, at the distal margin with black marginal band 3 mm. in breadth, from which fine black streaks run out proximally on the interneural folds. Uganda. — ♀-ab. **drucei** *Eltr.* is similar to the typical ♂, only differing in having the longitudinal streak and the hindmarginal spot of the forewing orange-red (instead of blood-red) and the subapical band light yellow; the median band of the hindwing is somewhat broader than in the ♂ and white; the ground-colour of the upper surface much lighter than in the ♂. Uganda. — ♀-ab. **ochreata** *Eltr.* has the light markings of the upper surface light dull ochre-yellow as in the ♂ of *jodutta* (57 e). Uganda. — **pseudepaea** *Dudg.* is the north-western race and is distinguished from the typical ♂ by the absence of the stripe in the cell of the forewing and by having the hindmarginal spot and the subapical band of the forewing brown-yellow and the hindwing also brown-yellow with triangular black basal area and a marginal band 2 mm. in breadth formed by the union of the black rays. The ♀ is similar to the ♂, but with lighter brown-yellow colour and almost without marginal band on the upperside of the hindwing. Ashanti and Nigeria.

*oberthueri.* **A. oberthueri** *Btlr.* (56 c, d) may be easily known by the numerous free basal and discal dots on the under surface of the hindwing. The upper surface is blackish brown-grey with the usual markings light ochre-yellow; cell of the forewing without light markings; subapical band composed of three spots in cellules 4 to 6; hindmarginal spot narrow and of almost uniform breadth, composed of spots in 1a, 1b, 2 (and 3), the spot in 2 not covering the base of the cellule. Hindwing with an ochre-yellow median band, which is as broad as the hindmarginal spot of the forewing and joins on to this spot; the distal part has more or less distinct longitudinal stripes, corresponding to those of the under surface. The distal half of the under surface between the veins with thick black rays, which are bifurcate at the distal margin and are separated from the veins by light lines. Nigeria to the Congo. In ab. **confluens** *Suff.* the subapical band of the forewing is joined to the hindmarginal spot in cellule 3. Among the type-form. — Larva slate-grey with red-yellow head, the spines of segments 2 to 5 and the upper spines of segments 10 to 13 black; those of segments 6 to 9 and the lower ones on segments 10 to 13 yellowish; lives on one of the Tiliaceae, *Ancistrocarpus densespinosus*. Pupa white with two dorsal and two lateral rows of orange-yellow, black-ringed spots and black lines on the wing-cases.

*viviana.* **A. viviana** *Stgr.* (56 c) is similar above to the preceding species and has the same light yellow markings. The hindmarginal spot of the forewing is, however, much broader, completely covering the base of cellule 2, and the median band of the hindwing is 6—8 mm. in breadth and in cellules 4 and 5 distally widened; the hindmarginal spot of the forewing forms a small spot in the lower angle of the cell. The under surface differs in the smaller number of the black dots in the basal area of the hindwing; in the cell and in cellule 7 these are connected by red streaks. Cameroons to Uganda and Bukoba.

*karschi.* **A. karschi** *Auriv.* (56 c) is intermediate between *viviana* and *cabira* and differs from both in having the hindmarginal spot on the upperside of the forewing narrower, of more uniform breadth and not covering the base of cellule 2. The under surface of the hindwing exactly agrees with that of *cabira*. Is perhaps, as ELTRINGHAM thinks, only a form of *cabira*. Cameroons and British East Africa.

*rupicola.* **A. rupicola** *A. Schultze* is a species quite recently described and apparently very variable, and is said to differ from the allied species in having the light markings of the upper surface much reduced and not very sharply defined. "On the forewing the subapical band, which in all the 7 specimens before me is pale yellow, in one ♀ indistinctly dusted with brown-red, runs as in *karschi*, but is narrower; the hindmarginal spot



(in 1 a to 2) is narrowest in 1 a, distally strongly incised at the veins; in 2 ♂♂ and 2 ♀♀ it is dull ochre-yellow, in one ♀ densely dusted with yellow-red, in another with black, in 3 examples yellow-red; the longitudinal streak at the hindmargin of the cell is indistinct in the specimens with predominantly yellow markings, distinct in those with the red ones and in one ♀ even encroaches into 1 a, so that this specimen somewhat approaches *Acraea bonasia*. On the hindwing the very narrow median band recedes far from the distal margin in cellule 3, where only a very small light spot still persists, but projects distad in 4 and 5 in the shape of a double tooth; the median band is in 2 pairs dull ochre-yellow, in 1 ♂ and 1 ♀ in cellule 2 distally, in 4 to 6 for its entire breadth dusted with yellow-red, in the other specimens yellow-red. Light marginal spots are only indicated in one ♀ by sparse yellow scaling. On the under surface *rupicola* likewise nearly approaches *karschi*. Expanse 37 to 42 (♂) to 44 to 46 (♀) mm". Primeval forests of the South Cameroons, where the species seems chiefly to frequent the cool granite rocks which occur here and there; was taken flying round a yellow-flowered Composite. — I was not able to introduce this species in the synopsis.

**A. cabira** may be known by the hindmarginal spot on the upperside of the forewing completely covering the base of cellule 2 and reaching the cell in 1 b also; the light spot in 1 b is, however, proximally cut off obliquely and hence much narrower at vein 1 than at vein 2, so that the hindmarginal spot assumes a peculiar shape. The median band of the hindwing is widened in cellules 4 and 5 and on the under surface the hindwing has always broad red streaks in the cell and in cellule 8 and at the distal margin the whitish marginal spots are proximally prolonged into red, black-edged streaks and the veins bordered by grey lines. Forewing beneath reddish to yellow-brown in the cell and at the base of cellule 1 b. — In the type-form **cabira** *Hpff.* the markings of the upper surface are light yellow and the hindmarginal spot of the forewing *cabira*. above is prolonged more or less basad along the hindmargin of the cell. In the figured specimen (56 c) this prolongation is so minute that the example belongs rather to *natalensis*. Congo to the Cape and Uganda. — f. **apecida** *Oberth.* (56 c) only differs in having the median band of the hindwing and the hindmarginal spot *apecida*. of the forewing more or less suffused with red; also the subapical band of the forewing is occasionally reddish. Congo and German East Africa. — f. **abrupta** *Grünb.* agrees with *apecida* above, but differs beneath in the mar- *abrupta*. ginal band of the hindwing being almost uniform black without light and dark streaks and in the absence of the red spots between the basal dots. Sesse Islands. — **natalensis** *Stgr.* (56 c) only differs from the type-form *natalensis*. in not having the hindmarginal spot on the upperside of the forewing prolonged basewards but terminating at the origin of vein 2. Natal to German East Africa. — ab. **biraca** *Suff.* differs in having the hindmarginal *biraca*. spot on the upperside of the forewing prolonged in 1 b to the base. Nyassaland.

**A. uvui** *Sm.* (56 b) is a small species and may be known by having the markings of the upper sur- *uvui*. face yellow-red (only at the inner margin of the hindwing light yellow) and the proximal edge of the hindmarginal spot of the forewing straight and sharply defined; it covers the base of cellule 2 and also forms a small spot in 3 and in the apex of the cell. In the type-form the hindwing has on the underside no red streaks between the basal dots and no light stripes in the black marginal band; the subapical band of the forewing is nearly straight. German and British East Africa; Uganda. — **balina** *Karsch* (56 b). Spots 4 and 5 of the *balina*. subapical band of the forewing are elongate and the band consequently almost angled at vein 6; the hindwing beneath with 1 or 2 red streaks or spots between the black dots in the cell and in cellule 8 and at least with indications of light streaks in the marginal band. Cameroons and Angola. — **interruptella** *Strand* is an *interruptella*. intermediate form and is characterized by having the large black dots near the base of the hindwing beneath free and in cellule 8 absent and by the marginal band having yellow or reddish spots at the proximal end of the light marginal spots. German East Africa.

**A. alicia** *E. Sharpe* (56 b). Markings of the upper surface yellow-red, only at the inner margin of the *alicia*. hindwing sulphur-yellow; the hindmarginal spot of the forewing completely covers the base of cellule 2 and is continued on both sides of the median nearly to the base, covering the posterior half of the cell and the anterior part of cellule 1 b; hindwing above triangularly black at the base, in the ♀ with light marginal spots. Hindwing beneath with light yellow ground-colour, at the base with black dots but without red spots or streaks; its marginal band deep black without light stripes and with no spots except the white marginal ones. Cameroons; Ruwenzori; Uganda; British East Africa; Kilimandjaro. — ♀-ab. **tenelloides** *Poult.* *tenelloides*. Subapical band of the forewing yellow; median band of the hindwing very broad and light yellow, the base but little black; marginal band on the underside of the hindwing light grey-yellow. British East Africa: Kikuyu. — ♀-ab. **cabiroides** *Poult.* Above similar to the ♂ but with marginal spots on the hindwing; hind- *cabiroides*. wing beneath with broader marginal band in which the marginal spots are bounded by distinct black, proximally elongated lines. British East Africa: Kikuyu.

**A. bonasia** is nearly allied both to *alicia* and to *sotikensis* and all three probably belong to one species. From *alicia*, which ELTRINGHAM regards only as a form of *bonasia*, it differs in having the base of cellule 2 of the forewing black and from *sotikensis* it seems to me only to differ in having the light longitudinal stripe at the median of the forewing above completely united with the hindmarginal spot. On this ground I also refer *praeponina* *Stgr.* to *sotikensis*. — **bonasia** *F.* (56 b). Markings of the upper surface yellow-red; the black dots *bonasia*. on the underside of the hindwing at least in the cell and cellule 7 connected by red spots or streaks; the



- marginal band on the underside of the hindwing with light streaks or lines at the veins. The ♀ either *cynthius*. only differs from the ♂ in having light marginal spots on the upperside of the hindwing or (ab. *cynthius Drury*) has the light markings of the upper surface light yellowish. A common and widely distributed species.
- siabona*. Sierra Leone to the Congo, Toro and German East Africa. — ♀-ab. *siabona Suff.* differs in the yellow subapical band of the forewing and the broader, more variegated marginal band on the underside of the hindwing.
- banka*. Togo. — *banka Eltr.* differs in having the marginal bands of the under surface pure black without stripes and the black dots on the hindwing beneath united into a subbasal band. Abyssinia. — Larva bluish white with more or less developed dark longitudinal lines; the spines on segments 1 to 3 and 11 to 13 blackish, the rest light.
- sotikensis*. **A. sotikensis** E. Sharpe (56 a). The red stripe on the median of the forewing above is usually entirely separated from the hindmarginal spot, occasionally joined to it, but always marked off by a distinct constriction. In the type-form the subapical band of the forewing is light yellow, but the other light markings of the upper surface are yellow-red; the hindwing beneath has distinct red streaks in the basal part and a variegated marginal band, ornamented with light lines at the veins and reddish streaks at the proximal end of the marginal spots. Congo, Angola and Rhodesia to Uganda, Abyssinia and British East Africa. —
- rowena*. *rowena Eltr.* (56 b, as *praeponina*) only differs in having the median band of the hindwing above light yellow
- katana*. in cellules 1 a to 3 and the under surface of the hindwing lighter. Ruwenzori. — In *katana Eltr.* all the markings of the upper surface, even the subapical band of the forewing, are red. Southern Congo. —
- supponina*. **supponina Stgr.** (56 b ?) closely approximates to *katana* above, but occasionally has the subapical band of the
- ninapo*. forewing light yellow (= ab. *ninapo Suff.*), and differs beneath from all the *sotikensis* forms in having discal dots 4 to 7 on the underside of the hindwing strongly developed and placed in a straight line vertically to the costal margin; the red streaks in the basal part are strongly developed and form almost a continuous
- praeponina*. transverse band. Congo. — **praeponina Stgr.**, like *katana*, has the markings of the upper surface red, but differs in the unicolorous black marginal band of the hindwing beneath, which is not striped but only ornamented with marginal spots. Kuilu and Congo.

**A. acerata.** Forewing black above with light subapical band and light hindmarginal spot, which is placed in 1 a to 3, forms a spot in the cell and often encloses a black discal dot in 1 b and in 2; hindwing above light nearly to the base, with or without black dots and with black, usually unspotted marginal band about 2 mm. in breadth. Hindwing beneath with reddish streaks in the basal part and with triangular, black-edged, yellow marginal spots in the lighter or darker marginal band. — **acerata Hew.** (56 a). Subapical band of the forewing in cellule 3 joined to the hindmarginal spot; light parts of the upper surface

*vinidia*. yellow-red. Ashanti to Angola and Uganda. — f. **vinidia Hew.** (56 a). Subapical band of the forewing not reaching the hindmarginal spot; light markings of the upper surface brown-yellow to red-yellow. Commoner

*brahmsi*. than the typeform. — ab. **brahmsi Suff.** only differs in having the light markings of the upper surface dark

*diavina*. brick-red and the spot in the cell of the forewing absent or small. Nigeria and Cameroons. — ab. **diavina Suff.** has on the forewing a small subapical spot, which only consists of three small spots in cellules 4 to 6,

*tenella*. and large discal dots in cellules 1 b and 2. Cameroons. — **tenella Rog.** is the East African race and is distinguished by the much lighter (white-yellow to whitish) colour of the light markings of the upper surface;

*ruandae*. the subapical band of the forewing is placed quite free. Nyassaland to Abyssinia. — ab. **ruandae Grünb.** only differs from *tenella* in the large black discal dots in cellules 1 b and 2 of the forewing. Ruanda.

*pullula*. **A. pullula Grünb.** entirely lacks the light subapical band of the forewing, but otherwise nearly agrees with *tenella* and may also be only an extreme form of *acerata*. Ruanda.

*lumiri*. **A. lumiri Baker** (60 g). Wings above with orange-red markings; subapical band of the forewing broad and rounded; the hindmarginal spot is very large, reaches the base of cellules 1 a to 2, almost entirely covers the cell and also forms a small spot in cellule 3; the hindwing above almost to the base orange-red with uniform marginal band 2 mm. in breadth and occasionally with some black basal dots. Hindwing beneath yellow with black basal and discal dots but without red spots in the basal area and with uniformly curved black marginal band, which encloses large whitish grey marginal spots. Expanse about 34 mm. Cameroons and Congo.

**A. terpsichore** is a common species and very variable, especially in the female; it occurs everywhere in the region except in Arabia and forms some not quite sharply defined races. In the type-form **terpsichore L.** the sexes are quite similar and above coloured and marked almost exactly as in *ventura* (56 a); the subapical band of the forewing is completely separated from the red-yellow basal half and is red-yellow or sometimes in the ♀ whitish; both wings above and beneath with distinct yellow marginal spots; the basal area of the hindwing beneath without red streaks or only in 1 c and the cell with a red streak between the

*janisea*. black dots; the marginal band always without red stripes on the interneural folds. — In ♀-ab. **janisea Godt.** (the ♀♀ 56 a are transitional to *janisea*) the red-yellow colour is replaced by dark grey and the subapical band of the forewing is usually white. — **subserena Smith** is similar to the form *buxtoni*; both wings above with sharply defined, deep black marginal bands, which on the forewing are unicolorous but on the hindwing have small light marginal spots; forewing beneath with sharply defined, light-spotted, black



marginal band; hindwing beneath with a few black dots in the basal part and with sharply defined black, light-spotted marginal band; subapical band of the forewing completely united with the basal area, enclosing a quadrate black spot at the end of the cell. Sierra Leone. — *rougeti* Guér. (= *eliana* Strand) has, *rougeti*. like the type-form, large light marginal spots on both wings above, but differs in the forewing having beneath at the distal margin only sharply prominent black vein-ends and no proximally defined light marginal spots, the light ground-colour reaching the distal margin between the veins without interruption; the light subapical band of the forewing is sometimes separate, sometimes united with the light basal part; basally straight and cut off almost vertically to the costal margin. Was described from specimens from Abyssinia, but occurs almost identically also in South and East Africa and on Madagascar. Females with almost transparent, whitish ground-colour on both wings may be called ♀-ab. *manjaca* Bdv. They occur especially on Madagascar. *manjaca*. — *buxtoni* Btlr. (56 a, as *rougeti*) closely approximates to *rougeti*, only differing in having the light marginal *buxtoni*. spots on the upperside of the forewing smaller or indistinct and the marginal band of the forewing deeper black and irregularly defined proximally; the subapical band of the forewing joined to the light basal half at vein 4. South and East Africa. In ab. *melas* Oberth. the wings are unicolorous black with an irregular white *melas*. spot instead of the subapical band of the forewing and beneath only relieved with yellowish at the distal margin and at the base. — ab. *connexa* Thur. has the distal black dot in the cell of the hindwing joined to the *connexa*. median dots. German East Africa. — ab. *excentrica* Thur. differs in having discal dots 3 to 6 on the under- *excentrica*. side of the hindwing placed much nearer to the distal margin than usual, elongated and sometimes almost reaching the marginal band. German East Africa. — ab. *toka* Strand closely approximates to typical *rougeti*, *toka*. only differing materially in having the proximal boundary-line of the marginal band on the underside of the hindwing black instead of reddish. Abyssinia. — ab. *intermediana* Strand is another nearly allied aberration *intermediana*. to *rougeti*, distinguished by the strong development of the red basal streak and the somewhat broader marginal band on the hindwing beneath. German East Africa. How STRAND, who has access to the extensive material of the Berlin Museum, could regard *intermediana* and *eliana* (*rougeti*) as independent species, is difficult to explain, as they obviously intergrade without sharp delimitation into the other *terpsichore* forms and are only characterized by trifling differences. — ab. *contraria* Strand is described as follows: "The red spots in the *contraria*. marginal band on the upper surface of both wings are only quite weakly indicated, hence at a cursory glance the band appears unicolorous; on the underside of the hindwing some of the black spots in the basal area are smaller, namely those of the distal and inner-marginal rows, and in addition the distal round spot in the cell is so small as to be almost obsolete. In the distal transverse row only 5 spots are present, namely those in cellules 1 b, 1 c, 2, 4 and 7, of which the one in cellule 4 is punctiform. The bordering of the black marginal spots is so broad that the black interspaces are as broad as the spots themselves. Beyond the black transverse spot on the underside of the forewing, which as usual is confluent with the costal margin, there is no further, smaller, black spot." German East Africa. Evidently an extreme aberration of *buxtoni*. — ab. *venturina* Thur. *venturina*. forms a transition to the following race; the underside of the hindwing has between the basal and discal dots red streaks in 1 c, 7 and in the cell; the marginal band is, however of uniform breadth with marginal spots of almost equal size, which at their proximal end have at most a reddish dot or spot. Uganda. — *ventura* Hew. (= *bukoba* Weym.) (55 a) is very similar above to a typical *terpsichore* or *rougeti* and has *ventura*. usually a free subapical band on the forewing, with the spots in 4 and 5 much prolonged distally; beneath the forewing has at the distal margin sharply prominent black veins and saffron-yellow streaks on the interneural folds; this race is characterized by the under surface of the hindwing; this has thick, sharply defined, bright red streaks in the cell and in cellules 1 e and 7 between the basal and the discal dots and occasionally similar streaks in other cellules also; the yellow marginal spots are very large and proximally produced into red streaks, which are much longer in cellules 1 c to 3 than in cellules 4 and 5; the proximal ends of the red streaks are connected by a dark line which bounds the light median band distally; thus the median band is not of almost uniform breadth, as in the previously described forms, but in cellules 4 and 5 strongly convex towards the base. In the ♀ the ground-colour of the upper surface is grey-yellow and the red streaks in the marginal band of the hindwing beneath are often absent. Was formerly always regarded as a separate species, but is connected with *terpsichore* by transitional forms and is probably correctly cited by ELTRINGHAM as a mere race of *terpsichore*. Southern Congo; Nyassaland; German and British East Africa; Uganda. — *ochrasceus* E. Sharpe nearly agrees *ochrasceus*. with *ventura* in markings, but has the ground-colour of both wings light yellowish white, and the subapical band of the forewing united with the ground-colour. Victoria Nyanza: Buka Bay. — *rangatana* Eltr. (60 a) *rangatana*. recalls the ♀ of *ventura*; on the upper surface the dark marginal band of both wings is broader and the marginal spots are smaller and removed from the distal margin; the subapical band of the forewing is placed quite free and consists of three narrow whitish spots in cellules 4 to 6, of which the one in 6 is not half as long as the others; the ground-colour of the upper surface light ochre-yellow; hindwing beneath whitish yellow and marked almost as in *ventura*; the red streaks in the basal part, however, united into a transverse band. British East Africa. — According to TRIMEN the larva is dull green with a white line on each side of the dorsum; dorsal and upper lateral spines black, the lower lateral spines yellow; head ochre-yellow; the first two dorsal spines projecting forwards and longer than the rest; lives on *Hermannia* and *Triumfetta rhomboidea*. Pupa



whitish with the usual black markings; FAWCETT has observed that pupae kept in dark boxes become slate-grey.

*goetzei*.

**A. goetzei** *Thur.* is similar above to a *terpsichore* without spots at the distal margin, but differs in having the hindwing black at the base as far as vein 2; the forewing is also narrowly black at the base; the large hindmarginal spot of the forewing covers cellules 1 a to 3 to beyond the middle and almost the whole of the cell and is orange-red, like the entirely free subapical band; the median band of the hindwing has the same colour or is somewhat tinged with yellowish at the inner margin; it is only 3 mm. in breadth at the inner margin, but widens anteriorly and in cellules 4 and 5 has a breadth of about 9 mm. The under surface of the forewing almost as in the form *rougeti* of *terpsichore*; that of the hindwing is, however, quite different, but in many respects approaches that of *ventura*; the ground is light yellow and the basal half is almost without markings in the middle, the cell having only a black dot near the base and 1 or 2 small dots at the apex; the discal dots in 3 to 5 entirely absent; cellule 1 c, on the other hand, has a broad red stripe from the base to the discal dot and there is another similar streak in cellule 7, bounded at each side by a black transverse streak. The gaily coloured marginal band, as in *ventura*, is much narrower in cellules 4 to 7 than in 1 b to 3 and basally bordered by a fine dark line; the veins are black and bordered at each side by a whitish line; the marginal spots are broad and short, proximally rounded and continued by broad red, black-edged stripes which reach the proximal boundary-line. Nyassaland and German East Africa (in the interior).

*excelsior*.

**A. excelsior** *E. Sharpe* (56 a) nearly approaches the preceding species and is quite similarly marked above, but has the median band of the hindwing and the subapical band of the forewing light lemon-yellow and the hindmarginal spot of the forewing also margined with light yellowish. The under surface of the hindwing only differs in having the marginal band deeper black without light lines on the veins, while the black basal and discal dots of cellules 1 a to 1 e form a red-spotted patch and those of cellules 5 to 7 a sharp, red-centred triangle. Nyassaland; German and British East Africa.

*fornax*.

**A. fornax** *Btlr.* (55 g) may be easily known by having the basal part of the forewing as far as the apex of the cell brick-red without spots and then black (♂) or black-grey (♀) with three small whitish semitransparent spots in 4 to 6; the black colour is continued at the costal margin to the base and is more or less transparent, especially in the ♀; the marginal spots are entirely absent above but are large and red-brown beneath. Hindwing above brick-red with large, free black basal and discal dots and black, proximally somewhat dentate marginal band, in which in the ♂ the marginal spots are absent or only distinct in 1 e to 3, but in the ♀ all large and dull red-yellow; beneath the hindwing is somewhat scaled with smoky brown in the basal area as far as the discal spots and has then a whitish median band of uniform breadth and a black marginal band with triangular red-yellow marginal spots. Madagascar.

*mirabilis*.

**A. mirabilis** *Btlr.* is a very distinct species and differs from all others in the under surface of the hindwing, but is evidently best attached to this subgroup as an aberrant form. Both wings above dark orange-yellow nearly to the distal margin, costal margin of the forewing and distal margin of both wings narrowly black; the veins at the distal margin black; the forewing with a black transverse spot at the end of the cell and in cellules 4 to 6 with a light yellowish subapical spot, broadly margined with black at both sides; the forewing beneath grey instead of blackish at the costal and distal margins. On the under surface of the hindwing the discal dots are streak-like and united into a somewhat curved line, which distally bounds the basal area: the basal area is grey between the basal and discal streaks, with reddish stripes at least in 1 a to 1 c, 4, 5, 7 and the cell; between the discal streaks and the marginal band runs an unspotted light yellow to whitish median band 1 to 2 mm. in breadth; the marginal band is about 3 mm. in breadth, proximally bounded by a black line and has a greenish or bluish grey ground-colour; the small marginal spots are scarcely lighter than the ground-colour, broader than long and proximally bounded by shallow black lunules; between these lunules and the proximal edge of the marginal band runs in each cellule a broad reddish streak. The marginal spots are thus formed as in the species of the following subgroups; from these, however, *mirabilis* differs in the absence of the discal dots of the forewing. Somaliland.

*zitja*.

**A. zitja** *Bdv.* (55 g). Both wings above brick-red with narrow black marginal band, which is more or less proximally prolonged at the veins; the forewing in addition with black costal margin, with a black dot in the cell, a larger one at the end of the cell and free black discal dots in 1 b to 6; hindwing above with some basal dots and with discal dots in 1 c to 7; forewing beneath without dark marginal band but with the extremities of the veins black, otherwise marked as above. The hindwing beneath with reddish ground-colour and with a narrow whitish median band, at the proximal side of which the discal dots are placed; the whitish colour of this band is continued to the distal margin as light lines at each side of the veins; the small transverse light marginal spots are proximally bordered by black streaks, which, however, do not touch in the middle. Madagascar. — ab. **radiata** *Guen.* differs in having the light bordering of the veins in the marginal band of the hindwing beneath much broader than in the type-form; the ♀♀ have a yellow-brown ground-colour. Madagascar. — ♀-ab. **calida** *Btlr.* resembles *radiata*, but has, instead of the marginal band of the upper

*radiata*.

*calida*.



surface, triangular black spots at the extremities of the veins. Madagascar. In ab. **rakeli** Bdv. the light border-*rakeli*. ing of the veins is entirely absent in the distal part of the hindwing beneath and also the proximal bordering of the marginal spots is often indistinct; hence the marginal band becomes almost unicolorous. — ♀-ab. **fumida** Mab. has a grey ground-colour, on both wings relieved with whitish at the discal dots; the marginal band on the underside of the hindwing apparently always agrees with that of *rakeli*. Madagascar.

**A. rahira** Bdv. (55 g). Both wings above light grey-yellow (♂) or light grey (♀); the veins in the distal *rahira*. part edged with black and at the distal margin widened into long triangular or rounded spots; basal and discal dots free and distinct; discal dots 1 b to 5 on the hindwing placed in an almost straight line and discal dots 6 and 7 forming nearly a right angle with them. The under surface is similar to the upper, only somewhat lighter and with reddish streaks in 1 b, 1 c and the cell between the basal and discal dots; distally to the discal dots runs in 1 a to 5 a whitish transverse band about 2 mm. in breadth, which is basally bounded by a dark line; this line terminates at vein 5 or 6 and is more or less indicated on the upper surface also; it evidently corresponds to the proximal boundary of the marginal band; the latter scarcely differs from the ground-colour or has some reddish streaks on the interneural folds; at the distal margin the ground-colour is even lighter yellow, without, however, forming distinct marginal spots, the proximal boundary of the spots being entirely absent or only very indistinct. — Larva blackish with the thoracic legs yellow, a yellow lateral line and a white dorsal line; the spines are short, yellow, placed in yellow spots; head also yellow; lives on *Erigeron*. Pupa whitish with black markings. This very distinct species is fond of damp and marshy places and occurs in the whole of South Africa to Angola and Rhodesia.

### Second Subgroup.

The species of this subgroup are nearly allied and, as is shown in the synopsis of the subgroups (p. 260), especially characterized by having the discal spot in cellule 1 b of the forewing placed almost straight behind the spot in cellule 2. In addition all the species agree in having discal spots (1 c) 3 and 5 of the hindwing placed nearer to the distal margin than the rest. The basal and discal dots of both wings are well developed. The anal end of the abdomen is in the ♂♂ unicolorous yellow to whitish, in the ♀♀ black with rounded light spots. The species may be divided into two sections.

### First Section.

Forewing with submarginal dots at least in cellules 1 b and 2.

### Synopsis of the Species.

- A. Forewing without black streaks on the interneural folds in cellules 3 to 6, at the base usually blackish as far as vein 2.
  - a) The discal dot in cellule 4 of the forewing is placed near the lower angle of the cell or the upperside of the hindwing has the marginal band very narrow or not sharply defined. *A. natalica*.
  - b) The discal dot in cellule 4 of the forewing is placed at a distance (about 2 mm.) from the lower angle of the cell. Marginal band of the hindwing above always sharply defined, about 2 mm. in breadth.
    - \*. Wings above with reddish or whitish ground-colour. *A. caecilia*.
    - \*\*. Wings above with uniform sand-yellowish ground-colour. *A. marnois*.
- B. Forewing with distinct black longitudinal streaks on the interneural folds in cellules 3 to 5 or 6 halfway between the distal margin and the discal dots.
  - a) The light marginal spots on the underside of the hindwing large and rounded, proximally bounded by thick black curves. *A. oncaea*.
  - b) The light marginal spots on the underside of the hindwing very narrow, streak-like and proximally bounded by very shallow, nearly straight curves or without proximal black boundary but here confluent with the ground-colour. *A. atergatis*.

**A. natalica** Bdv. (55 f) varies greatly in size, but is on an average larger than the following species, ha-*natalica*. ving an expanse of 46 to 80 mm. The ground-colour of the wings above is reddish to orange-yellow or brown-yellow and occasionally in the ♀♀ on the hindwing much darkened, dark red-brown; both wings at the base blackish to about vein 2; the forewing with apical spot 4 to 5 mm. in breadth and black fringes, sometimes also with the veins narrowly black; a basal dot in the cell and in 1 b at the outer edge of the black basal spot; discal dots 4 to 6, 9 and 10 united into a transverse streak placed almost vertically to the costal margin; submarginal dots in 1 b to 3; hindwing with unspotted or indistinctly spotted black marginal band 4



- to 5 mm. in breadth, which in the ♂ is sharply defined, but in the ♀ sometimes shades into the darkened ground-colour without sharp delimitation. Wings beneath lighter, not darkened at the base; forewing without dark apical spot; hindwing with bright red spots between the basal dots and between the discal dots and the marginal band at least in 1 b to 3; the marginal band with large yellow marginal spots and always sharply defined proximally. South and East Africa to Angola, southern Congo and British East Africa. — Larva light yellow with white lateral line, white, black-edged dorsal line and a black streak on each side. Pupa yellowish
- umbrata*. white with black markings. — **umbrata** Suff. differs in having on the forewing immediately behind discal spots 4 to 6 a broad dark grey, somewhat transparent transverse band, extending from the costal margin to vein 3 and distally dentate at the veins; between this band and the dark apical spot four submarginal spots of the ground-colour are thus separated off in cellules 3 to 6. The marginal band of the hindwing above is narrower than in the type-form and irregularly defined proximally. Mozambique to British East Africa. —
- albida*. ♀-ab. **albida** ab. nov. approximates to the form *umbrata*, but has the ground-colour of the upper surface white and the marginal band on the upperside of the hindwing much widened, reaching the discal dots; wings
- abadima*. beneath whitish yellow. Island of Pemba. — **abadima** Ribbe (= *clarei* Neave) forms a transition between *umbrata* and *pseudegina*. Both wings above with bright orange-yellow ground-colour; it differs from *umbrata* in having the marginal band on the upperside of the hindwing a mere line or only indicated by some black scales and the marginal spots on the hindwing beneath very large and only separated by the veins; the grey subapical band of the forewing is lighter, more transparent and more indistinctly defined. The ♀ is darker and the ground-colour forms three whitish spots before the apex of the forewing. Angola to the Cameroons, Uganda
- pseudegina*. and Abyssinia. — **pseudegina** Westw. (55 f) is the north-western race and is distinguished from *abadima* by having the forewing above entirely or for the most part blackish or black-grey. Senegal to Nigeria. Larva lighter than that of the type-form.
- caecilia*. **A. caecilia** F. is similar to the preceding species, but on an average smaller (expanse 56 to 70 mm.) and differs in having the discal dots in cellules 4 to 6 of the forewing smaller, rounder and further removed from the apex of the cell; the forewing has 2 to 4 submarginal dots (in 1 b to 4). Ground-colour above light reddish yellow to salmon-colour; base of both wings and apex of the forewing black for the same extent as in *natalica*; hindwing above always with sharply defined black marginal band about 2 mm. in breadth, not or indistinctly spotted; under surface as in *natalica*, but the red spots on the hindwing indistinct. Senegal to
- artemisa*. Nigeria; Nubia; Uganda; Abyssinia; Somaliland; British and German East Africa. — ♀-ab. **artemisa** Stoll has the ground-colour above white, with the black markings much widened. West Africa? — ♀-ab.
- hypatia*. **hypatia** Drury only differs in the darker, redder ground-colour of the upper surface. Sierra Leone. — **pudora**
- pudora*. Auriv. (55 g) is an eastern race, in which the black colour at the apex of the forewing is only very narrow and
- umbrina*. does not cover the base of cellules 7 and 8. German and British East Africa. — ab. **umbrina** Auriv. only differs from *pudora* in the forewing above having between veins 2 and 5 or 6 a grey, semitransparent submarginal nebulous band. German East Africa: Kilimandjaro.
- marnois*. **A. marnois** Rog., which I formerly incorrectly regarded as a form of *oncaea*, is, as ELTRINGHAM has discovered, very nearly allied to *caecilia* and probably only a form of it. Wings above sand-yellow; at the base narrowly blackish; the black colour does not reach vein 2; at the apex and distal margin narrowly darkened, but much more broadly than in *caecilia pudora*; basal and discal dots on both wings as in *caecilia*. Soudan.
- oncaea*. **A. oncaea** Hpff. (55 e) is distinguished at once by the fine black submarginal longitudinal streaks in cellules 3 to 5 (to 6) of the forewing; the discal dot in 6 is usually wanting on the forewing. ♂: the forewing is thinly scaled, with dull orange-yellow ground-colour, at the base not darkened, and at the apex only black for a breadth of 2 mm.; discal dots usually small and punctiform, arranged exactly as in *caecilia*. Hindwing more densely scaled than the forewing and above more reddish; its marginal band very narrow but more distinctly spotted. In the ♀ the wings have the ground-colour above dark grey and the forewing has a broad white subapical band from the costal margin to vein 3. South and East Africa to the southern Congo region and Abyssinia. ♀-ab. **obscura** Suff. Forewing above brown, hindwing above whitish with rose-red spots at the
- obscura*. base, at the inner margin and behind the discal dots. ♀-ab. **defasciata** Suff. Forewing brown without white
- defasciata*. subapical band. ♀-ab. **alboradiata** Suff. has the veins of the hindwing white. ♀-ab. **modesta** Suff. Hindwing
- modesta*. with a large white area in the middle. — **caoncius** Suff. is a seasonal form (?), in which the apex of the forewing above has only a fine black marginal line quite as on the under surface. German East Africa. ab. **liacea**
- caoncius*. **liacea** Suff. only differs in having the marginal band of the hindwing not sharply defined above and composed of thick black lunules beneath. German East Africa.
- atergatis*. **A. atergatis** Westw. (55 f) has two rather different seasonal forms. In both forms the wings above are bright uniform orange-yellow to the base, beneath in the dry-season form lighter and in the rainy-season form somewhat darker and more reddish than above; the black dots are arranged as in *oncaea*, but in the rainy-season form very large and thick; the forewing above is only narrowly black at the costal and distal margins, but without apical spot, and has strong black streaks in 3 to 6; the hindwing is a little blackened at the base of cellule 1 c and the cell; the seasonal forms differ particularly in the development of the marginal band



of the hindwing; in the rainy-season form the black marginal band is on both surfaces about 1 mm. in breadth, above unspotted, beneath with narrow streak-like white marginal spots; in the dry-season form the marginal band is entirely absent or is only weakly indicated beneath, hence the marginal streaks of the under surface shade into the ground-colour without any dividing-line; the under surface of the hindwing has more or less distinct red spots. Angola; southern Congo region and Rhodesia.

## Second Section.

Forewing without submarginal dots.

### Synopsis of the Species.

- I. Forewing at least in cellules 3 to 6 with black streaks midway between the distal margin and the discal dots.
  - A. Distal margin of the hindwing weakly undulate and the proximal edge of the black marginal band on the upperside of the hindwing strongly undulate. *A. doubledayi*.
  - B. Distal margin of the hindwing entire; marginal band on the upperside of the hindwing very narrow, light-spotted or with the proximal margin entire.
    - a) Marginal band of the hindwing above black, unspotted and with the proximal margin entire. Wings normally scaled. *A. axina*.  
(cf. also *A. braesia* f. *regalis*).
    - b) Marginal band of the hindwing above light-spotted or very narrow and sometimes incomplete.
      - \*. Wings very thinly scaled; discal spots 4 to 6 on the forewing placed in a line vertical to the costal margin. *A. aequatorialis*.
      - \*\*. Wings normally scaled; discal spots 4 to 6 on the forewing placed in a line obliquely to the costal margin. *A. ella*.
- II. Forewing without black submarginal longitudinal streaks.
  - A. Discal dots 4 to 6 on the forewing large and placed immediately beyond the apex of the cell.
    - a) Discal spots 4 to 6 on the forewing separated and rounded. *A. intermedia*.
    - b) Discal spots 4 to 6 on the forewing angled and united into a transverse band.
      - \*. Forewing above with black apical spot 6—7 mm. in breadth and then with light yellow (♂) or white (♀) subapical band as far as the discal dots. *A. rhodesiana*.
      - \*\*. Forewing above in the apical part at least to vein 3 and to the basal half of the cell blackish with broad white subapical band. *A. mima*.
      - \*\*\*. Forewing above without dark apical spot. *A. aglaonice* ♀ ab.
  - B. Discal dots 4 to 6 on the forewing placed far beyond the apex of the cell.
    - a) Wings above not darkened at the base or if darkened the forewing above with broad black apical spot.
      - \*. Forewing completely, although sometimes thinly, scaled without hyaline spots or only with a small one in 4 and 5.
        - §. Discal dots of the hindwing usually small and far removed from the marginal band; forewing in 4 to 6 just beyond the discal dots with small hyaline (♂) or whitish (♀) spots; apex of the forewing above without black spot. *A. aglaonice*.
        - §§. Discal dots of the hindwing usually larger and placed nearer to the marginal band; forewing without hyaline spots.
          1. Discal dot 2 on the hindwing not placed proximally to the origin of vein 3. Forewing always with broad black apical spot. *A. caldarena*.
          2. Discal dot 2 on the hindwing placed at the base of cellule 2 proximally to the origin of vein 3. *A. pudorella*.



\*\* Forewing more or less broadly hyaline between the discal dots and the distal margin.

*A. braesia*.

b) Both wings above at the base darkened at least to the middle of the cell, black-brown. Forewing above without black apical spot.

*A. stenobea*.

*doubledayi*.

**A. doubledayi** Guér. (= gaekwari *E. Sharpe*) (55 e) may be easily known by the shape of the marginal band of the hindwing, the red-brown ground-colour of the upper surface and the strongly developed black markings, as well as by the small light or transparent spots in 4 to 6 of the forewing behind the discal dots; under surface of the hindwing reddish yellow with large whitish marginal spots. In the type-form the forewing above has a broad black marginal band, which is formed by the union of the black submarginal streaks with the veins and the marginal line, reaches the light subapical band and encloses yellow marginal spots; both wings above darkened at the base. Abyssinia and Somaliland. — ♀-ab. **candida** Eltr. differs in the white ground-colour of both wings. Niam-Niam. — **arabica** Eltr. has the wings more densely scaled with whitish, but not transparent, subapical band on the forewing; the wings above not or scarcely darkened at the base. Arabia. — **sykesi** *E. Sharpe* has the ground-colour on the upper surface lighter, on the forewing only separated by a black line from the distal margin; the broad black marginal band is consequently entirely absent and the black submarginal streaks in cellules 2 to 5 are placed free in the ground-colour; the light subapical band of the forewing is indistinct or entirely absent. German and British East Africa; Uganda and Soudan.

*axina*.

**A. axina** Westw. (55 e) is a small species, only measuring 30 to 50 mm., and recalls *oncaea* and in many respects also *doubledayi*; the wings above have the ground-colour reddish-yellow or grey-yellow, at the base, especially on the hindwing, blackish; forewing at the apex and distal margin narrowly black with black veins and short black streaks on the folds in 3 to 5; marginal band of the hindwing above deep black, unspotted, 1 mm. in breadth, beneath with semicircular whitish marginal spots; wings beneath light yellowish with orange-yellow or reddish spots; beyond discal dots 4 to 6 on the forewing the ground-colour is usually somewhat lighter. Angola and Damaraland to Rhodesia and Nyassaland.

*aequatorialis*.

**A. aequatorialis** Neave (60 g) has the forewing thinly scaled and only bordered by a fine black line at the apex and distal margin; marginal band of the hindwing above in the ♂ very narrowly light-spotted or incomplete, in the ♀ more sharply defined and more indistinctly spotted; the base of the hindwing above narrowly tinged with blackish; the black dots are arranged as in the other species; wings above light (reddish) yellow; the forewing at the distal margin with finely black veins and fine streaks on the folds, occasionally with submarginal dot in 2 or in 1 b. British East Africa: Kisumu. — **anaemia** Eltr. only differs in the lighter and more thinly scaled wings. Kilimandjaro and British East Africa.

*ella*.

**A. ella** Eltr. (60 b) is so similar to *aequatorialis* that it is sufficient to mention the differences. Somewhat larger, expanse 50 to 60 mm.; forewing completely scaled without grey subapical band. Angola.

*rhodesiana*.

**A. rhodesiana** Wichgr. (55 d, as *aglaonice*; 60 b). Both wings above reddish orange-yellow, darkened at the base, especially on the hindwing; forewing with black apical spot 4 mm. in breadth and fine black line at the costal and distal margins, discal spots 4 to 6 large and angled, and placed immediately beyond the apex of the cell; marginal band on the upperside of the hindwing 2 mm. in breadth, black and almost unspotted; wings beneath with light yellow ground-colour; the hindwing spotted with reddish at the base or throughout, marginal spots large and whitish. The forewing in the ♀ with white subapical band, which in the ♂ is absent or only indicated by light yellow colour. Rhodesia.

*mima*.

**A. mima** Neave is very similar to *rhodesiana*, but is easily distinguished by the forewing in both sexes having a white subapical band in cellules 3 to 6 and especially by the apical half or in the ♀ the greater part of the forewing above being blackish; on the under surface of the forewing the apical half is suffused with dark grey; otherwise agrees with *rhodesiana* and may well be merely a form of this. Southern Congo: Katanga; Rhodesia.

*aglaonice*.

**A. aglaonice** Westw. Both wings above red-yellow nearly to the base with the usual black dots; the discal dots of the hindwing, however, are smaller than usual and discal dots 3 to 6 on the forewing are normally placed far beyond the apex of the cell, opposite to the origin of vein 10; the forewing above without definite dark apical spot, only with narrow black marginal line as at the costal and distal margins; veins at the distal margin black; hindwing above with black, unspotted marginal band 2 to 3 mm. in breadth; wings beneath lighter, hindwing at the base with red spots and in the marginal band with streak-like whitish marginal spots. It is peculiar to this species that the forewing has nearly always in cellules 4 and 5 (and 6) small hyaline spots, just distally to the discal dots; in the ♀ these spots are often whitish instead of hyaline. Natal; Transvaal; Mashonaland; Manicaland; Delagoa Bay. ♀-ab. **albofasciata** ab. nov. Forewing in the basal third blackish, in the middle black-grey and more or less transparent whitish, before the distal margin for a breadth of about 5 mm. grey-yellow with black veins; at the apex black for about 3 mm.; black marginal band only 1 mm. in

*albofasciata*.



breadth. Hindwing above black with a white median band 7 mm. in breadth, which encloses the comparatively large discal dots. Under surface light grey-yellow with yellow streaks on the interneural folds; forewing only with very fine black marginal line; hindwing with marginal band 2 mm. in breadth, enclosing large semicircular whitish marginal spots. Manicaland. Should probably be regarded as an extreme rainy-season form.

**A. caldarena** Hew. (55 d). ♂. Ground-colour of both wings above light reddish ochre-yellow to light rose-red (= ab. **recaldana** Suff.); forewing with a sharply defined black apical spot 7 mm. in breadth, at the costal and distal margins very finely black; discal dots 4 and 5 are small and free and placed nearer to the proximal margin of the apical spot than to the apex of the cell; both wings a little darkened at the base; marginal band of the hindwing usually with light spots; under surface of the forewing lighter yellow, of the hindwing reddish; the discal dot in 2 is not placed proximally to the base of vein 3. The ♀ has the wings above broadly darkened at the base, occasionally for the most part blackish. Natal to Damaraland and British East Africa. — ♀-ab. **nero** Btlr. differs in having the ground-colour of both wings above suffused with dark grey, while the upperside of the hindwing has large, sharply defined, quadrate white spots in cellules 1 c to 4 at the proximal side of the unspotted black marginal band. Victoria Nyanza. — f. **neluska** Oberth. (55 f) is only distinguished from the type-form by having the black apical spot of the forewing narrower, only 3 to 4 mm. in breadth. German East Africa. — The larva has a delicate rose-reddish to orange-yellow ground-colour and black spines and lives on *Wormskjoldia longepedunculata*. Pupa yellowish with black markings.

**A. intermedia** Wichgr. entirely agrees with the type-form of *caldarena* except that discal dots 4 and 5 of the forewing are placed nearer to the apex of the cell than to the black apical spot and that the ♀ has a broad white subapical band on the forewing. Rhodesia and southern Congo.

**A. pudorella** Auriv. (55 d) is also very nearly allied to *caldarena*, of which I formerly regarded it as only a seasonal form. ELTRINGHAM has, however, pointed out that discal dot 2 on the hindwing is placed nearer to the base of cellule 2 in *pudorella* than in *caldarena* and that the male genitalia are differently formed. The type-form of *pudorella* further differs in having the forewing thinly scaled and entirely without the black apical spot. German and British East Africa; Abyssinia. — **detecta** Neave has a black apical spot 6 to 7 mm. in breadth on the upperside of the forewing and is consequently even more like *caldarena*. Rhodesia; Nyassaland and German East Africa.

**A. braesia** Godm. Forewing long and narrow with the distal margin nearly straight, basal half of the upper surface reddish yellow-brown, apical half transparent grey with free yellow spots at the distal margin and black marginal band, which is but little widened at the apex. Hindwing above orange-yellow, often with rose-red tinge, at the base scarcely blackish and with black, unspotted marginal band, proximally somewhat undulate; the discal dots often only showing through from beneath; under surface of the hindwing more or less reddish, with distinct black dots and almost streak-shaped light yellow marginal spots. German and British East Africa; Abyssinia. — f. **regalis** Oberth. (55 e) has beyond discal dots 3 to 6 on the forewing a well defined, almost transparent grey subapical band, but the forewing is otherwise densely scaled. German and British East Africa.

**A. stenobea** Wallengr. (= *acronycta* Westw.). ♂. Both wings above broadly darkened with black-brown from the base to the middle or often to the apex of the cell; upperside of the forewing only with black marginal line or apical spot; the veins not darkened at the distal margin; that of the hindwing with unspotted, almost entire-margined black marginal band 2 mm. in breadth; ground-colour of the upper surface light brown-yellow, occasionally somewhat reddish. Under surface lighter yellow, at the base of the hindwing reddish; marginal band of the hindwing with large light marginal spots; discal dots of both wings rather large, those in cellules 3 to 5 of the hindwing often absent; the dots in cellules 4 to 6 of the forewing touch one another and are placed rather far beyond the apex of the cell. The ♀ (55 c; = *lygus* Druce) only differs from the ♂ in the somewhat darker ground-colour of the upper surface, the broader marginal band of the hindwing, a more or less extended white shade in the middle of the hindwing and often also in the broader scaling at the base. South Africa to Angola and German East Africa.

### Third Subgroup.

The discal dot in cellule 1 b of the forewing is always placed nearer to the distal margin than the one in 2. Hence the species of this subgroup are easy to distinguish from those of the second. Only when one of these dots is wanting is it impossible to determine the position of an example and it must be looked for in both subgroups. In many species of the third subgroup the discal dots of the hindwing show an arrangement that does not occur in those of the second (cf. p. 267). As in the second subgroup the species may here also be divided into two sections according to the absence or presence of the submarginal dots of the forewing.

#### First Section.

Forewing without submarginal dots.



## Synopsis of the Species.

- I. Cell of the hindwing beneath always with two black dots or a dot and a transverse streak, which are both placed at or before the origin of vein 2.

A. Cellules 2 to 5 of the hindwing with discal dots.

- a) Discal dot 4 of the hindwing (as in the second subgroup) is placed nearer to the base than discal dots 3 and 5 or at least as far from the distal margin as these.

\*. The veins on the upperside of the hindwing between the middle and the marginal band sharply and rather broadly black. Hindwing beneath only with a fine black line before the distal margin, which borders the rectangular marginal spots, or entirely without proximal black bordering to the spots, which consequently shade into the ground-colour and the reddish interneural folds. *A. atolmis*.

\*\*. The veins on the upperside of the hindwing not black. The marginal spots on the hindwing beneath rounded or triangular and proximally bounded by black lunules.

§. The veins on the upperside of the forewing not black.

0. Marginal band on the hindwing above narrow and of uniform breadth, about 1 mm.

1. Forewing above with a black apical spot 4 to 5 mm. in breadth. Abdomen of the ♂ white at the tip. Larger species.

a) Forewing densely scaled. *A. leucopyga*.

b) Forewing beyond the middle thinly scaled, whitish grey. *A. diogenes*.

2. Forewing above at the apex only with a black marginal band 1 mm. in breadth. Abdomen of the ♂ yellow at the tip. A smaller species. *A. mansya*.

00. Marginal band on the hindwing above 4 to 5 mm. in breadth, broader in the middle. *A. lofua*.

§§. The veins on the upperside of the forewing at the apex and distal margin more or less broadly margined with black.

0. The discal dot in cellule 3 of the hindwing is large and placed midway between the marginal band and the base of the cellule. *A. guillemei*.

00. The discal dot in cellule 3 of the hindwing is absent or is placed nearly at the base of the cellule.

1. Marginal band of the hindwing above black without distinct light spots.

*A. nohara*.

*A. chambezi*.

2. Marginal band of the hindwing above with large, sharply prominent light spots.

*A. onerata*.

b) Discal dot 4 of the hindwing is placed nearer to the distal margin than discal dots 3 and 5.

\*. The forewing entirely without separated light marginal spots.

§. Veins on the upperside of the forewing in the distal part broadly edged with black. Forewing usually with discal dots in 3 to 6. *A. periphanes*.

§§. Veins on the upperside of the forewing not or very little blackened. The discal dots in cellules 3 to 6 of the forewing are wanting or are not all present.

1. Forewing with discal dots in some of cellules 3 to 6 and with large black apical spot. *A. lualabae*.

2. Forewing without discal dots in 3 to 6 or, when with any of these dots, without black apical spot.

a) The apical spot on the upperside of the forewing 9 to 10 mm. in breadth and deep black. *A. chaeribula*.

b) The apical spot on the upperside of the forewing not so broad or entirely absent. *A. acrita*.

\*\*. The forewing on both surfaces with light spots in the dark marginal band at least in cellules 3 to 8. Expanse 55 to 65 mm. Both wings above with the ground-colour red-yellow to light yellow to whitish.



a) Forewing above not darkened at the base; discal dots 2 to 4 small, rounded and placed in a nearly straight line. Hindwing above with regular marginal band, at most 2 mm. in breadth. *A. hypoleuca.*

b) Forewing above darkened at the base to beyond the middle of the cell. Discal dots very large; those in cellules 3 to 6 united into a very broad transverse band. Marginal band of the hindwing above 5 to 6 mm. in breadth, irregularly defined proximally and with very small white dots at the distal margin. *A. turna.*

B. Cellules 3 to 5 of the hindwing without discal dots. The distal spot in the cell of the hindwing strigiform and angled. Hindwing on both surfaces with large light marginal spots of the ground-colour, only bounded by black lunules. *A. aureola.*

II. Cell of the hindwing only with one black dot, which is often placed beyond the origin of vein 2. Forewing above usually with light marginal spots. Marginal band of the hindwing above usually light-spotted.

A. Wings above with red-yellow to grey-yellow ground-colour. Hindwing beneath not golden yellow.

a) Forewing above and beneath with broad white subapical band. *A. wigginsi.*

b) Forewing without white subapical band. *A. anacreon.*

B. Hindwing above deep black without markings (♂) or black-grey with discal dots and broad unspotted black marginal band, beneath glossy light golden yellow with red dots at the extremities of the marginal spots. *A. mirifica.*

**A. aureola** *Eltr.* (60 c) is a rare species, only one specimen (from Angola) being yet known. The wings *aureola.* are bright orange-yellow above, at the base a little darkened; forewing with a black dot in the cell, the usual discal dots, the one in 1 b placed very near to the distal margin and those in cellules 3 to 6 forming a shallow curve, and a fine dark marginal band, which is not widened at the apex; the veins at the distal margin finely black and somewhat widened. Hindwing above and beneath with large marginal spots, which are of the ground-colour and are bounded by black lunules; the discal dots of cellules 2 to 5 entirely absent, but there is a dot near to the marginal band in 6 and another in the middle of cellule 7; the underside of the hindwing is lighter, at the base in 1 a to 1 c and the cell ochre-yellow; this basal area scarcely reaches vein 2, is distally bounded in the cell and 1 c by a thick black streak and encloses a black dot in the cell.

**A. onerata** *Trim.* seems from the figure to be nearly allied to *aureola* and has the marginal band on the *onerata.* hindwing and the basal area on its under surface quite similar, but differs in its smaller size (expanse about 45 mm.), in having discal spots in cellules 2, 4 and 5 of the hindwing and in the more irregularly arranged discal dots in cellules 3 to 6 of the forewing. Damaraland.

**A. leucopyga** *Auriv.* (= *liszti Suff.*) (55 e). Forewing above bright orange-yellow to the base, in fresh *leucopyga.* specimens with rosy reflection; forewing above with black apical spot, 4 to 5 mm. in breadth, as far as vein 4 and then with very fine marginal line; discal dots 3 to 6 are free and placed in a straight line, almost vertical to the costal margin; hindwing above with sharply defined marginal band 1 to 2 mm. in breadth and discal dots which are not very distinct, often only showing through from beneath. Forewing beneath without black spot at the apex, but here whitish yellow with orange-yellow streaks on the interneural folds; hindwing beneath light grey-yellow with sharply prominent black dots and reddish spots at the base and between the veins and dots. The rainy-season form is smaller, less brightly coloured above, with dark tinge at the base and broader marginal band, not sharply defined proximally, on the upperside of the hindwing. Rhodesia and Nyassaland.

**A. diogenes** *Suff.* (55 f) is only known in the ♀, but suggests a thinly scaled form of the preceding *diogenes.* species. Forewing transparent whitish grey, at the apex and distal margin broadly darkened, with discal dots in 1 b and 2 and occasionally also with a median dot, but with no other dots. Hindwing somewhat more fully scaled, above dull grey, beneath with reddish spots; marginal band and black dots almost as in *leucopyga.* Southern Congo.

**A. lofua** *Eltr.* (60 e). ♂. Wings above reddish ochre-yellow, at the base narrowly scaled with black *lofua.* and with the usual black dots; forewing with black marginal band, which is gradually widened at the apex into a spot 3 mm. in breadth, beneath lighter but otherwise almost as above; hindwing above with very broad unspotted, deep black marginal band, which is broader in the middle, beneath with light yellow ground-colour and white marginal spots. The ♀ differs in having the forewing light ochre-yellowish without black discal dots and the hindwing light reddish grey-yellow; the basal and discal dots are very small and the marginal band somewhat narrower than in the ♂ and with grey marginal spots above also. Rhodesia, on the Lofu River.



- mansya*. **A. mansya** *Eltr.* (60 a) has an expanse of 40 to 50 mm. and differs from the two following nearly allied species only in not having the veins of the forewing edged with black at the distal margin and in the discal dot in cellule 3 of the hindwing being placed almost midway between the marginal band and the cell. The ♀ is lighter than the ♂. Rhodesia.
- chambezi*. **A. chambezi** *Neave* is very similar to *A. nohara* (55 c), only differing in having the veins of the forewing above very finely black at the distal margin; the discal dot in 4 of the forewing is not placed in the same line as the dots in cellules 5 and 6 and the discal dot in 5 of the hindwing is absent; the discal dot in cellule 3 of the hindwing is placed near the base of the cellule; forewing usually with basal dot in cellule 1 b. North-East Rhodesia.
- nohara*. **A. nohara** *Bdv.* (55 c). Wings above light reddish with the usual black dots, which in ab. **junodi** *Oberth.* are strongly but irregularly enlarged, and with black marginal band; marginal band of the forewing only 1 mm. in breadth, not widened at the apex, that of the hindwing. 1.5 to 2 mm. in breadth, not or indistinctly spotted; veins on the upperside of the forewing edged with black towards the distal margin; discal dots 3 to 6 or at least 4 to 6 placed in a straight line, vertically to the costal margin; forewing with a basal dot in 1 b; of the discal dots on the hindwing those in cellules 2 and 4 are placed somewhat nearer to the base than the rest. The under surface is lighter, but otherwise scarcely differs except in the light yellow marginal spots of the hindwing. In the ♀ the ground-colour varies from light reddish to yellowish grey. — Larva yellow with dark longitudinal lines and black spines; lives on *Wormskjoldia longepedunculata*. Pupa long and slender, whitish grey with black lines and yellow, black-margined spots on the abdomen. Natal, Transvaal, Zululand and Delagoa Bay. — **halali** *Marsh.* is smaller and has smaller discal dots, of which those in 1 b of the forewing and 3 and 5 of the hindwing are nearly always wanting; the marginal band of the forewing is narrower than in the type-form. The ♀ with grey-red to grey-yellow ground-colour. Mashonaland. — **pseudatolmis** *Eltr.* is as small as *halali*, which it closely resembles; the discal dots in cellules 3 and 5 of the hindwing and in 1 b of the forewing are, however, present and the dot in 4 of the forewing is narrow and transverse. Rhodesia. — **punctellata** *Eltr.* differs from the type-form in its broader wings, the broader marginal band of the hindwing and in the discal dot in 4 of the forewing, which does not stand in a line with the dots in 5 and 6 but more distally. Except that the discal dot in cellule 3 of the hindwing is placed nearer to the base it agrees entirely with *guillemei* (55 c) and in my opinion belongs rather to this species than to *nohara*. Nyassaland; Angoniland; German East Africa: Kigonsera.
- guillemei*. **A. guillemei** *Oberth.* (= *acutipennis* *Lathy*) (55 c), as the figure shows, only differs from typical *nohara* in having the marginal band of the forewing somewhat widened at the apex, the marginal band of the hindwing broader, the discal dot in cellule 4 of the forewing not placed in a straight line with the dots in 5 and 6 and especially in having the discal dot in 3 of the hindwing placed midway between the marginal band and the base of the cellule. Angola and at Lake Tanganyika.
- atolmis*. **A. atolmis** *Westw.* agrees very closely with *A. nohara* and only differs essentially in having the veins of the hindwing black in the distal part and in the entire absence of the marginal band of the hindwing on both surfaces. Damaraland, Rhodesia, Angola and the southern Congo. — f. **acontias** *Westw.* (55 c as *atolmis*) is the rainy-season form and differs in having all the black dots larger and particularly in the hindwing having a distinct marginal band, though only 1 mm. in breadth, above unspotted, beneath enclosing narrow, transversely placed rectangular whitish marginal spots. The ♀ has the ground-colour of both wings brown to black-grey.
- decora*. — ab. **decora** *Weym.* is a melanotic aberration of the ♂, in which the middle of the forewing above is blackish. Angola.
- periphanes*. **A. periphanes** *Oberth.* (55 b). With this species begin the forms in which discal dot 4 of the hindwing is placed nearer to the distal margin than discal dots 3 and 5; in having the veins of both wings black towards the distal margin it approximates to *A. atolmis* and differs from the following species; the discal dot in 5 of the hindwing is nearly always absent and the one in cellule 4 of the forewing is placed somewhat more distally than those in 3, 5 and 6, which stand in a straight line. In the type-form the forewing above has a black apical spot 6 to 7 mm. in breadth and the hindwing a marginal band 1.5 to 2 mm. in breadth, which is usually light-spotted above also; the upperside of the forewing is not, and that of the hindwing but little darkened at the base. The ♀ has often a darkened or whitish ground-colour. Rhodesia, southern Congo and Nyassaland. — f. **beni** *Baker* only differs in the absence of the black apical spot on the forewing above. Angola and Rhodesia. — f. **acritoides** *Eltr.* The apical spot on the upperside of the forewing is absent or is only 2 mm. in breadth and the discal dots in 3 to 6 of the forewing are entirely absent; wings above not darkened at the base; marginal band of the hindwing as in the type-form; through the absence of discal dots 3 to 6 of the forewing this form becomes very similar to *A. acrita* (55 b), from which it only differs in the black veins of the forewing. Rhodesia. — f. **umida** *Wichgr.* differs from the preceding in having the upperside of the wings darkened at the base and in that of the hindwing having a deep black, unspotted marginal band 3 to 4 mm. in breadth; the apical spot of the forewing is absent or only moderately developed. Rhodesia. — f. **melaina** *Eltr.* (59 f) has the apical spot on the upperside of the forewing 6 to 7 mm. in breadth and only gradually narrowed posteriorly, a very broad, unspotted marginal band on the upperside of the hindwing and the base of the wings darker above. Rhodesia.



**A. lualabae** *Neave* is very similar to the two following species, scarcely differing except in the fore- *lualabae*. wing having two to four discal dots in cellules 3 to 6. Both wings above orange-yellow with large black dots; apical spot of the forewing about 8 mm. in breadth, indicated beneath also; marginal band of the hindwing on both surfaces with large light spots; hindwing above blackish at the base. Congo: Lualaba.

**A. chaeribula** *Oberth.* (55 b) is very similar to certain forms of the next species, only differing in the *chaeribula*. very large and deep black apical spot on the upperside of the forewing. Discal dots 3 to 6 of the forewing are absent and the marginal band of the hindwing is light-spotted. The ground-colour is in the ♂ orange-yellow, in the ♀ sometimes dull dark brown, only yellowish behind the cell of the forewing. Rhodesia, southern Congo, Nyassaland and German East Africa.

**A. acrita** is very variable, but may always be known by the veins not being black and by discal dots 3 to 6 of the forewing being usually absent and the apical spot of the forewing if present lighter and smaller than in *chaeribula*. According to ELTRINGHAM the species has 6 races or subspecies (the type-form, *ambigua*, *pudorina*, *littoralis*, *manca* and *bellona*) and in addition numerous aberrations and seasonal forms. The ground-colour of the upper surface bright fiery orange-red; discal dots 1 b and 2, as well as the median dots of the forewing, placed in a line almost vertical to the costal margin. — **acrita** *Hew.* (55 b). Forewing *acrita*. beyond the cell orange-yellow, at the apex at most with black marginal band 2 mm. in breadth; hindwing above with regular, sharply defined, light-spotted marginal band about 2 mm. in breadth and beneath with large red spots or stripes both proximally and distally to the discal dots; the forewing above not or very little darkened at the base. The rainy-season form differs in having the apical spot of the forewing 3 to 4 mm. in breadth with its proximal edge straight, while the forewing above is often darkened at the base as far as the basal dot in 1 b and the marginal band on the upperside of the hindwing is about 3 mm. in breadth and proximally more or less widened, particularly in cellule 3. In the ♀ the forewing above is brown-yellow to coffee-brown to the apex of the cell and has the apical spot on an average broader; the ♀♀ of the rainy-season form have a blackish ground-colour and are only in the subapical part of the forewing smoky yellow or whitish. Mashonaland, Manicaland, Rhodesia and Nyassaland. ab. **msamviae** *Strand* is based on ♂♂ of the *msamviae*. extreme rainy-season form, in which the marginal band of the hindwing above is 4 mm. in breadth and at the inner margin widened over the whole wing as far as the base. On the southern shores of Lake Tanganyika. ♀-ab. **aquilina** *Strand* has the whole hindwing and the basal half of the forewing coffee-brown; marginal band *aquilina*. of the hindwing sharply defined proximally and the basal area of the hindwing not blackened; discal dots of the hindwing beneath separated by at least their diameter and forming a strongly curved row. German East Africa. ab. **nyassicola** *Strand* is according to ELTRINGHAM a ♂ form intermediate between those of the *nyassicola*. dry and rainy seasons and has the apical spot of the forewing 2 to 3 mm. in breadth and large marginal spots on the upperside of the hindwing, only bounded by fine lunules. Nyassaland. — **ambigua** *Trim.* is dis- *ambigua*. tinguished by having the apical spot of the forewing larger, about 6 mm. in breadth, the marginal band of the hindwing above only composed of fine or indistinct lunules, showing through from beneath, and particularly by the hindwing beneath being almost unicolorous between the discal dots and the marginal band, without distinct red spots. The subapical area on the upperside of the forewing is usually lighter than in the type-form and occasionally in the ♀ white. Danaraland to Tanganyika. — **bella** *Weym.* agrees with *ambigua* in the *bella*. large apical spot of the forewing, which is 7 to 8 mm. in breadth, in the formation of the marginal band on the hindwing above and the colouring of the hindwing beneath, but differs from it and from all the other races in the very large black spots of the forewing; in the rainy-season form, **bellona** *Weym.* (59 f), these some- *bellona*. times become so large as to touch one another; the basal dot in cellule 1 b of the forewing is absent in the dry-season form, but large in that of the rainy season. Forewing in the ♀ of the rainy-season form with white subapical area. Angola. — **littoralis** *Eltr.* is the race usually occurring in German East Africa and *littoralis*. nearly approaches the type-form; it only differs in the somewhat broader apical spot of the forewing, which in the dry-season form is 3 mm. and in the rainy-season form, **usaramensis** *Strand*, 4 to 5 mm. in breadth. ♀-ab. *usaramen-* **aquilia** *Thur.* is a rainy-season form in which the hindwing and the basal half of the forewing are coffee- *sis.* brown; the black marginal band on the upperside of the hindwing is at least 4 mm. in breadth and is very *aquilina*. irregularly defined proximally. ♀-ab. **chaeribulula** *Strand* has the apical spot on the forewing above 7 mm. *chaeribu-* in breadth and the hindwing blackened at the base and is regarded by ELTRINGHAM as an intermediate form *lula*. between the dry- and rainy-season forms. East Africa. — **pudorina** *Stgr.* (55 b) may be known by the longer *pudorina*. and more pointed forewing, which at the apex is scarcely black or at most for a breadth of 2 mm. (= **uten-** *utengulen-* **gulensis** *Thur.*, the rainy-season form); the ground-colour of the upper surface is duller than in the type- *sis*. form and the black dots of the forewing are small or absent; marginal band on the upperside of the hindwing with large marginal spots, the under surface not or scarcely spotted with red between the marginal band and the discal dots. Kilimandjaro and British East Africa. — **manca** *Thur.* is similar to *pudorina*, but has the *manca*. forewing shorter and somewhat broader and differs from all the other forms in the forewing having well developed discal dots in cellules 3 to 6; marginal spots on the upperside of the hindwing large but bounded by sharply prominent lunules; hindwing beneath without large red spots in cellules 2 to 6. German East Africa. f. **lindica** *Strand* is unknown to me, but according to ELTRINGHAM is a form of *manca*. It differs con- *lindica*. siderably, however, in that the forewing has the apical spot 5 to 6 mm. in breadth and lacks the discal dots



*pauperata*, in 3 to 6. German East Africa. — THURAU has expressly designated as *pauperata* all such specimens of *acrita* as lack the basal dot in cellule 1 b of the forewing; they occur among all the races of *acrita* and are not rare.

The three following species differ from all the others in having only one black dot or transverse spot in the cell of the hindwing and the forewing above and beneath ornamented with light marginal spots. The discal dots of the hindwing are arranged in such a way that the dots in 2 to 4 stand in an almost straight line, forming an acute angle with those in 4 to 6, which are also placed in a line; the dot in 7 is placed more basally than that in 6 and those in cellules 1 b and 1 c stand in a line with the one in 2 or somewhat further distad.

*anacreon*. **A. anacreon** *Trim.* (55 a). Wings above in the ♂ orange-yellow, in the ♀ grey-yellow to violet-grey, often darker on the forewing; both wings above with dark marginal band, which encloses large, light, sharply defined marginal spots; the veins at the proximal side of the marginal bands distinctly thickened with black; the black dot in the cell of the hindwing is always placed in the distal half of the cell; the hindwing beneath with light yellow ground-colour, at the base of cellules 1 c and 8 always red, often also with red spots in the other cellules between the black dots. The discal dots in 4 to 6 of the forewing are well developed and the ground-colour sometimes much lighter beyond them. South Africa to the Transvaal, Nyassaland and German East Africa. — *anacreontica* *Smith* (55 b?) is very similar to the type-form, but differs in the lighter ground-colour of the upper surface, smaller discal dots and better developed red spots between the black dots on the underside of the hindwing. British East Africa. — *bomba* *Smith* differs in the forewing above having a black apical spot 4 to 8 mm. in breadth, not or indistinctly spotted, and lacking discal dots (3) 4 to 6. In the dry-season form the apical spot of the forewing is only about 4 mm. in breadth and the wings above are not darkened at the base; in the rainy-season form, *induna* *Trim.* (55 b), on the other hand, the apical spot of the forewing is 7 to 8 mm. in breadth and the wings, especially the hindwing, are broadly blackish at the base above. Angola and Rhodesia to British East Africa. — *speciosa* *Wichgr.* has the ground-colour of the upper surface brighter brown-red and the marginal band of the forewing above is only indicated by the thickened black veins; the under surface brightly coloured with well developed red spots on the hindwing; otherwise agreeing with the type-form. Angola.

*wigginsi*. **A. wigginsi** *Neave*. Forewing above blackish at the costal margin, in the apical part and at the distal margin, with a broad white subapical band in cellules 3 to 6, 9 and 10 and often also with yellow marginal spots; the cell and cellules 1 a to 2 red-yellow as far as the marginal band; a black dot in the cell and a transverse spot at its apex and also discal dots in 1 b to 5 or at least in 1 b to 3; hindwing above golden yellow with narrow, yellow-spotted marginal band; forewing beneath as above, but lighter and at the distal margin grey with black veins; hindwing beneath light yellow with narrow white-spotted marginal band, which is proximally accompanied by gold-yellow quadrate spots, and between the discal and basal dots with an irregularly broken red transverse band, in addition with a red spot at the base of cellules 1 c and 8. The ♀ only differs in having the red-yellow colour on the forewing above less extended. Expanse 46 to 56 mm. British East Africa and Uganda.

*mirifica*. **A. mirifica** *Lathy*. Although this species differs from all other African Acraeids in the colouring of the upper surface in the ♂, the markings of the underside show that it belongs to this subgroup and that EL-TRINGHAM has undoubtedly done rightly in placing it in the same section as *anacreon* and *wigginsi*. ♂: both wings above deep black, the hindwing unicolorous without markings, the forewing immediately beyond the apex of the cell with a light yellow transverse band 4 to 5 mm. in breadth, which runs from the costal margin to the hinder angle and is angled at vein 4, and at the distal margin with small reddish dots. Forewing beneath in cellules 1 a to 2 and in the greater part of the cell deep black, in the apical part and at the costal margin golden yellow with narrow black, red-spotted marginal band. Hindwing beneath gold-yellow with black basal and discal dots and black marginal band, which encloses large gold-yellow marginal spots and red dots at the proximal end of the marginal spots; a red spot at the base of cellules 1 c and 8. The ♀ differs from the ♂ in having the forewing above dark grey with distinct black discal dots and a black marginal band, while the yellow transverse band of the forewing is absent and both wings beneath are dull goldy yellow without any black markings except the marginal bands and the basal and discal dots. Expanse 41 to 48 mm. Angola and Rhodesia.

As an addendum to this section of the third subgroup I cite the two following species. They are probably most nearly allied to the species of the fifth subgroup, but by the synopsis of the subgroups they must be placed here.

*turna*. **A. turna** *Mab.* is a broad-winged species with the ground-colour of both wings milk-white and an expanse of about 60 mm.; distal margin of the forewing distinctly emarginate; both wings with marginal band not sharply defined, blackish above, grey beneath, and with light marginal spots, which, however, are often very small or indistinct on the upperside of the hindwing; forewing darkened at the base to beyond the middle of the cell, black-grey above, reddish in the cell beneath; two transverse spots in the cell and the discal dots large and black, discal dots 3 to 6 united with the median spot into an irregular transverse band, which is often joined both to the costal margin and the marginal band; basal and discal dots of the hindwing rather small, but all present and normally arranged; the discal dot in 4 placed close to the marginal



band. Madagascar. ab. *marmorata* Smith only differs in having the ground-colour of both wings light yellow *marmorata*. to sulphur-yellow. Madagascar.

**A. hypoleuca** Trim. Expanse about 60 mm. Wings above orange-red; forewing above with dark *hypoleuca*. marginal band, which encloses 8 large light marginal spots; discal dots in 1 b to 6, all rounded, that in 1 b near the distal margin, those in 2 to 4 in a line, those in 4 to 6 also in a line, placed almost vertically to the preceding; beneath as above, but with whitish subapical band. Hindwing above with white-spotted marginal band 2 mm. in breadth and distinct discal spots, beneath marked as above but with whitish ground-colour and larger white marginal spots. Seems to be nearly allied to *A. chilo* and *zetes*. The only known specimen probably came from German South-West Africa.

## Second Section.

Forewing with distinct submarginal dots at least in 1 b and 2. The discal dots of the hindwing are arranged as in the species of the second subgroup; the dots in 2 and 4 are consequently placed nearer to the base than those in 3 and 5.

## Synopsis of the Species.

- I. The veins of the forewing above becoming gradually more broadly edged with black towards the distal margin. The forewing usually with submarginal dots only in 1 b and 2.
  - a) The veins of the hindwing also thickened with black towards the marginal band. The light marginal spots on the hindwing beneath are narrow and proximally bounded by nearly straight black streaks, which are occasionally indistinct. *A. petraea*.
  - b) The veins of the hindwing not black towards the marginal band. The light marginal spots on the hindwing beneath proximally bounded by black lunules. *A. buettneri*.
- II. The veins of the forewing not edged with black. The forewing often with 4 to 6 submarginal dots. The apex of the forewing beneath with 2 to 4 light marginal spots.
  - a) Marginal band of the hindwing above narrower, about 2 mm. in breadth, proximally curved in each cellule and usually with distinct light marginal spots.
    1. The black dots on both wings large and strongly developed. *A. violarum*.
    2. The black dots on the wings smaller and often partially absent. *A. asema*.
  - b) Marginal band of the hindwing above 4 to 5 mm. in breadth, unspotted and often not sharply defined proximally. *A. omrora*.

**A. petraea** Bdv. (54 f) recalls *A. atolmis*, from which it can be at once distinguished by the submarginal *petraea*. dots of the forewing. Wings above bright red to orange-yellow with the black markings strongly developed; discal dots 3 to 6 of the forewing are placed in a line vertically to the costal margin and are often enlarged and joined to the median spot; the hindwing beneath light reddish yellow with red spots between the dots and red spots or streaks before the marginal band; the discal dot in 3 seems to be always absent. The ♀♀ have a broad white or whitish subapical band on the forewing and the ground-colour is often darker, reddish grey to black-grey, particularly on the forewing. The dry-season form, *petrina* Suff., has reddish *petrina*. marginal spots at the apex of the forewing. — Larva goldy brown with black longitudinal and transverse lines and black spines; head black with white angled spot; lives on *Oncoba kraussiana*. Pupa light brown to red-brown with black markings. — ab. *laborana* Suff. only differs in having the black dusting at the base *laborana*. of the forewing extended as far as the black dots in the cell and the discal dots of the forewing smaller. — *rohlfsi* Suff. (60 d). After an exact comparison of the figures and description of this form with *petraea* I can *rohlfsi*. only regard it as an extreme form of the latter, from which it differs in having the marginal band of the hindwing narrow and on the underside indistinct. In all other characters it agrees with *petraea*. The difference between *rohlfsi* and *petraea* is hence almost the same as between *atolmis* and *acontias* or between *atergatis* and its dry-season form. I have specimens of *petraea* before me from German East Africa which form a distinct transition to *rohlfsi*, having the marginal band of the hindwing scarcely more than 0.5 mm. in breadth; this is, however, distinctly defined beneath by black streaks. Ukerewe Island in Victoria Nyanza.

**A. buettneri** Rog. (54 f). Wings above orange-yellow with large angular black dots, which are arranged *buettneri*. as in *petraea*; distal margin and apex of the forewing narrowly black and the veins before the distal margin black-edged; wings beneath more reddish yellow and the hindwing often with red spots at the base; marginal band narrow, 1 to 1.5 mm. in breadth, above unspotted, beneath with large, transversely placed white marginal spots; the discal dot in 3 large and nearer to the distal margin than those in 2 and 4. Damaraland, Rhodesia and southern Congo.

**A. violarum** Bdv. (55 a). Wings above with dull brick-red to grey-red to grey (♀) ground-colour and *violarum*. large black dots; forewing with fine black marginal line, which is widened at the apex into a spot 2 mm. in



breadth, and with 6 submarginal dots (in 1 b to 6); both wings above more or less darkened at the base; marginal band of the hindwing with the proximal boundary lunulate; under surface almost as the upper, but the marginal band of the hindwing with large whitish spots and the forewing at the apex with small marginal spots of the same colour. South Africa to Angola and Mashonaland.

*asema*. **A. asema** *Hew.* (55 a) is very similar to the preceding species, but on an average somewhat smaller, 36—52 mm., with duller, more grey-yellow ground-colour and smaller black dots, the submarginal dots of the forewing in particular being smaller and rarely all present. Angola, Manicaland, Mashonaland and Nyassaland. — f. **gracilis** *Wichgr.* only differs in having the marginal band of the hindwing narrow, 1 mm. in breadth. Mashonaland.

*omrora*. **A. omrora** *Trim.* may be easily known by the marginal band on the upperside of the hindwing, which is black, unspotted and not sharply defined. Both wings above blackish at the base; the black dots arranged quite as in the last two species, but the submarginal dot in 5 of the forewing appears to be always absent. In the type-form the ground-colour is dark ochre-yellowish, the forewing has no black apical spot (only a fine marginal line) and the marginal band of the hindwing above is 2.5 mm. in breadth. Angola and Damaraland. — **umbrata** *Wichgr.* has the ground-colour brick-red to grey-red, an apical spot on the forewing 3 mm. in breadth and the marginal band of the hindwing 3 to 5 mm. in breadth. Rhodesia and Katanga.

#### Fourth Subgroup.

The species of this subgroup closely approximate to those of the preceding, only differing in the forewing having on both surfaces, or at least beneath, distinct black or brown longitudinal streaks on the interneural folds, which reach the distal margin. Only in the last species, which is very aberrant and little known, these streaks are apparently little distinct.

#### Synopsis of the Species.

I. Hindwing with a submarginal dot in cellule 7, hence with three black dots in this cellule. Forewing nearly always with submarginal dots in 1 b and 2. *A. cepheus.*

II. Both wings without submarginal dots.

A. The discal dot in cellule 4 of the forewing is not or scarcely nearer to the distal margin than the one in 3 and the discal dots in 3 to 6 consequently stand in a nearly straight line, vertical to the costal margin.

a) The discal dot in 1 b of the forewing is placed almost straight behind the dot in 2. The forewing long and narrow, its distal margin deeply emarginate. Marginal spots on the underside of the hindwing reddish. *A. perenna.*

b) The discal dot in 1 b of the forewing is placed much nearer to the distal margin than the one in 2. The forewing of normal shape, with the distal margin almost straight. Marginal spots on the underside of the hindwing whitish or greenish light yellow.

1. The forewing beneath without black submarginal line. *A. egina.*

2. The forewing beneath between veins 1 to 5 (7) with thick black submarginal line, which forms the proximal boundary of the light marginal spots, above with sharply defined dark marginal band. *A. medea.*

B. The discal dot in cellule 4 of the forewing is so much nearer to the distal margin than the dot in 3 that discal dots 2 to 4 form a straight line, almost parallel with the costal margin. *A. niobe.*

*cephesus*. **A. cepheus** *L.* (54 f) differs from all the African Acraeids known to me in the hindwing having a submarginal dot in cellule 7, so that there are 3 black dots in this cellule; the forewing has a black transverse streak at the middle and one at the apex of the cell and large discal dots, of which the one in 1 b is nearer to the distal margin than that in 2 and those in cellules 3 to 6 form a transverse band, at least in the ♂; the submarginal dots are often united with the black marginal band. The marginal band of the hindwing is 2 mm. in breadth, proximally dentate on the veins, above unicolorous, beneath spotted with light yellow, and the discal dots are approximated to the base; beneath the ground-colour is light yellowish to whitish, with large red or orange-yellow spots between the black dots and at the marginal band. In the type-form, described by LINNÉ and figured by CLERCK from the type in his rare work "Icones insectorum", the forewing has in 3 to 6 beyond the discal dots a light subapical band, which in the ♂ is red-yellow, in the ♀ white; in the ♂ the basal part of the forewing is red-yellow as far as the submarginal dots in 1 b and 2 and the discal dots in 3 to 6, and the hindwing above red-yellow, black-scaled at the base; in the ♀ both wings above are black-grey with smaller dots than in the ♂, the hindwing often somewhat tinged with yellowish. *abdera*. Gold Coast to Angola and the Soudan. — **abdera** *Hew.* (54 f ♂) differs in the absence of the light subapical



band of the forewing and in having both wings above more broadly black at the base. Nigeria to the Congo. — In *eginopsis* *Auriv.* the forewing of the ♂ has a blackish ground-colour above and has only in the distal half of cellules 1 a and 1 b a large red-yellow spot; the hindwing coloured as in the type-form. Sierra Leone to Togoland. ♀-ab. *pheusaca* *Suff.* Forewing above yellow-brown as far as the ochre-yellow subapical band, with the black dots small or absent; hindwing above brown-yellow with small discal dots; occurs together with *abdera*. ♀-ab. *sucepha* *Suff.* Wings above with red-yellow ground-colour as in the ♂ and the forewing with white subapical band. Marginal band of the hindwing above with yellow marginal spots. Among the type-form. — ♀-ab. *nigrescens* *Eltr.* (54 f; as *abdera* ♀). Both wings above black-brown with distinct black dots; the hindwing above somewhat lighter before the marginal band; the latter with marginal spots; is probably the ♀ of *eginopsis*. Sierra Leone.

**A. perenna** *Dbl. & Hew.* (54 e) is distinguished by the long, narrow forewing, with the termen emarginate, almost exactly the same shape as in *Papilio antimachus*; the discal dots are large and on the hindwing are placed near the base of their cellules (the one in 3 seems to be always absent); forewing above black with yellow-red hindmarginal spot, which covers the middle of cellules 1 a to 2, beneath lighter, at the distal margin broadly yellowish with black veins and stripes on the interneural folds. Hindwing above black nearly to the discal dots, then with red transverse band and at the distal margin with black, red-spotted marginal band, beneath much lighter, at the base greenish yellow with free dots and some red spots or stripes close to the base; marginal band as above. Larva black with yellow spots; head and spines black. Sierra Leone to Angola, Uganda and Nairobi. — In *thesprio* *Oberth.* (54 e) the red-yellow colour of the forewing more or less completely covers also the cell and the base of cellules 3 to 6. Katanga; Nyassaland; German and British East Africa. — *kaffana* *Rothsch.* (59 f) nearly agrees with *thesprio*, but has the discal dots larger and the marginal band of the hindwing broader. Abyssinia.

**A. egina** *Cr.* (54 d) is much larger than *perenna* and has the wings quite differently shaped, but is very similarly coloured in the male. In this sex the forewing is blackish, in the middle somewhat transparent, and has at the hinder angle in 1 a and 1 b a large yellow-red spot, which, however, does not extend beyond vein 2; hindwing above black at least as far as vein 2, then with broad yellow-red transverse band and broad, unspotted black marginal band, somewhat dentate at the veins, the discal dot in 4 placed nearer to the distal margin than the rest. Forewing beneath almost as above, but lighter and more thinly scaled; hindwing beneath light reddish with red spots at the base and at the marginal band and between the large, free black dots more or less greenish yellow; marginal spots large, quadrate, greenish yellow; collar red; last half of the abdomen light yellow. In the ♀ the ground-colour of both wings is black grey without red-yellow spots, but with an indefinite whitish subapical band on the forewing. Larva whitish yellow with two black longitudinal lines on each side; head and spines black. Pupa whitish with very fine black markings. Senegal to Angola, Nyassaland and Uganda. — *harrisoni* *E. Sharpe.* In the borderlands between the West and East African subregions there usually occur also in this species transitions to the East African race. These are distinguished by having the red-yellow colour of the forewing present not only in 1 a and 1 b, but also as fine longitudinal streaks first in 2 and then also in the other cellules; the under surface of the hindwing is for the most part suffused with orange-yellow; the discal dots are sometimes as large as in *egina*, sometimes much smaller, particularly on the hindwing, ab. *contraria* *Grünb.* (= *kiwuensis* *Grünb.*). Rhodesia; Nyassaland and on the shores of the Victoria Nyanza. — *areca* *Mab.* (54 e) is the East African race and following the rule which obtains in almost all African Acraeids is characterized by having the red-yellow colour of the forewing more extended, more or less completely covering the cell and the base of cellules 2 to 6; the under surface of the hindwing is for the most part orange-yellow. In the ♀ the ground-colour is more yellowish than in the type-form. South-East Rhodesia, Nyassaland, German and British East Africa.

**A. medea** *Cr.* (54 d) is in my opinion best treated as an independent species. The light yellow marginal spots on the underside of the forewing and the thick black submarginal line which bounds them proximally form quite a new feature, to which nothing in *egina* and its races corresponds. Both wings above at the base broadly black to vein 2 or 3, then as far as the sharply defined black marginal band, which is 4 to 5 mm. in breadth, yellow-red (♂) or white (♀) with very large discal dots, arranged quite as in *egina*; forewing beneath reddish, at the base and in the ♀ also in the middle light yellow or whitish; hindwing beneath in the middle greenish light yellow or whitish, at the base and at the marginal band with brown-red or orange-yellow spots. Princes Island.

**A. niobe** *E. Sharpe* is an interesting species, unfortunately, however, only known to me through the description and figure. ELTRINGHAM considers its affinities quite uncertain; it seems to me to be most nearly allied to *egina* and *medea*. Only the ♂ is yet known. This has the ground-colour of both wings black-grey, darker at the margins and semi-transparent in the middle; hindwing above with black marginal band 2 mm. in breadth; the black dots of the forewing are large and arranged as in *egina* except that those in cellules 4 to 6 are placed much nearer to the apex, so that discal dots 2 to 4 stand in a straight line, as in *chilo*; the basal and discal dots of the hindwing are also very large and those in cellules 1 b to 5 stand in an almost straight line directed towards the apex; the formation of the marginal band of the hindwing beneath is not mentioned



in the description, but it seems to be without spots there also. Collar and posterior half of the abdomen red. Island of São Thomé.

### Fifth Subgroup.

On the under surface of the hindwing the black basal dots are united into a black basal patch, spotted with light (usually white). By this the species can be very easily distinguished from all others except a few species of the seventh subgroup, with which they are in fact extremely closely connected by the ♀ of *chilo*. The discal dot in 1 b of the forewing, when present, is always placed nearer to the distal margin than the one in 2.

### Synopsis of the Species.

- I. Discal dots 4 to 6 on the forewing large and united into a transverse band, and placed so near to the apex of the cell that dot 3 is also in alignment with them.
  - A. Forewing beneath at the base light-coloured with some dark or black dots or streaks. Hindwing with distinct discal dots.
    - a) Forewing above with distinctly defined light marginal spots at least in 1 b and 2 or entirely black-brown without light spots, never with white ground-colour. Marginal band of the hindwing spotted with yellow or unicolorous. *A. zetes*.
    - b) Forewing above between the hinder angle and vein 4 only with fine black marginal line or occasionally broadly darkened with yellowish marginal spots, but in this case with white ground-colour. Marginal band of the hindwing dotted with white. *A. pseudolycia*.
  - B. Forewing beneath at the base deep black as far as vein 2; the black colour distally cut off straight in the cell. Hindwing at least beneath without discal dots.
    1. Forewing above to vein 4 only with fine marginal line. Hindwing never white in the middle. *A. anemosa*.
    2. Hindwing white in the middle or forewing above with dark marginal band. *A. welwitschi*.
- II. Discal dots 4 to 6 on the forewing placed in a transverse line about midway between the cell and the apex and so far distally to the dot in 3 that discal dots 2 to 4 stand in a straight line almost parallel with the costal margin.
  - a) Forewing long and pointed with the termen somewhat emarginate; the dark marginal band widened towards the apex. Hindwing above but little darkened at the base. *A. chilo*.
  - b) Forewing broad and obtuse with the termen convex and a black marginal band of a uniform breadth of 4 mm. Hindwing above at the base black as far as vein 2. All the black dots very large. *A. oscari*.
  - c) Forewing without light-spotted marginal band. Hindwing above scarcely black at the base. Discal dots small. Ground-colour red-yellow. *A. zambezina*.  
(See p. 285).

*A. zetes* is a common species in Africa, distributed from Sierra Leone to Natal and Abyssinia; it develops several races and forms and is darkest in the north-west, gradually becoming lighter and lighter towards the south and east. Forewing with 2 black spots in the cell, one at its apex, large elongate discal dots in 3 to 6 and 10, rounded free discal dots in 1 b and 2 and at least beneath with large yellow marginal spots in 1 b to 6. Hindwing in addition to the confluent basal dots with a median dot and distinct discal dots, of which the one in 2 is placed close to the base of the cellule and that in 4 further distad than the rest; the black marginal band broad on both surfaces or at least beneath with light spots. — *zetes* L. Forewing above dark blackish, unicolorous or beyond discal dots 3 to 6 a little lighter; discal dots little distinct on the dark ground. Hindwing above black to the apex of the cell, then with orange-red median band 5 to 6 mm. in breadth, in which only discal dots 3 to 5 are placed free, beneath with whitish ground-colour and reddish spots in the basal area and on the marginal band. Sierra Leone (to the Cameroons; transitions to *menippe*). — *menippe* Drury (54 b). Forewing above with distinct red-yellow marginal spots and usually also with larger or smaller red-yellow spots in 1 b, 2 and the cell and with small whitish subapical band in 4 to 6; the red-yellow transverse band on the upperside of the hindwing 10 to 12 mm. in breadth. The ♀ is larger and has the ground-colour black-grey on the forewing, grey-yellowish on the hindwing. *jalema*. Throughout West Africa to Angola and Uganda. — *jalema* Godt. is an intermediate form between *menippe* and *acara*, and has the forewing above black at the base to vein 2 and then a red-yellow transverse band about 12 to 13 mm. in breadth, which extends from the inner margin to the anterior margin of the cell, covers the base of cellules 2 and 3 and encloses 4 black spots (one in the cell, the median spot and discal dots 1 b and 2); subapical band, as in *menippe*, short and narrow. Cameroons to Rhodesia. — *acara* Hew. (54 b, c)



is the South and East African race and only differs from *jalema* in having the red-yellow colour on the upper surface even more extended and particularly in the forewing having a large red-yellow subapical band about 7 mm. in breadth in 4 to 6; forewing at the apex black for a breadth of about 6 mm. Natal to Rhodesia, Nyassaland and British East Africa. ab. **mhondana** Suff. Discal spots 4 to 6 of the forewing united with the black spot at the end of the cell. Among *acara*. ab. **caffra** Fldr. (= *tescea* Suff.) only differs from *acara* in having the upperside of the hindwing whitish in the middle. Natal; Transvaal. — f. **barberi** Trim. differs from *acara* in the forewing above having at the apex a marginal band only 2 mm. in breadth; the black lunulate submarginal line on the upperside of the forewing is sometimes strongly developed, sometimes entirely absent, ab. **trimeni** Auriv. Transvaal and Griqualand. — **sidamona** Rothsch. & Jord. is similar to *acara*, only differing in having the basal dots in the cell and in 1 b of the forewing free and the marginal dots on the underside of the forewing in 1 b to 5 all completely bordered with black proximally. Abyssinia. — The larva of *zetes* is orange-yellow with a dark red transverse band dorsally on each segment; head glossy red; spines black; lives in Natal on Passiflora. Pupa reddish white with black markings.

**A. pseudolycia** can scarcely be distinguished by any constant external characters from *zetes*, but according to ELTRINGHAM has the lateral clasps of the ♂ somewhat differently formed. All the forms most nearly approximate to the race *acara* and give the impression of an extreme development of this. The light ground-colour is more extended on the upper surface of both wings and the marginal spots of the forewing above are either entirely absent (being united with the ground-colour) or are small and placed in a greyish nebulous band which is not sharply defined; on the under surface they are never bounded proximally by a black lunulate line and are usually entirely absent; discal dots of both wings on an average smaller than in *acara*. — **pseudolycia** Btlr. (60 f). Ground-colour of both wings whitish; forewing above at the distal margin with a black-grey, proximally ill-defined nebulous band 5 to 6 mm. in breadth, which encloses small yellowish marginal spots, beneath with a sharply defined black apical spot 3 mm. in breadth, which from vein 4 onwards passes into a very fine marginal line. Angola. — **astrigera** Btlr. (60 f). Ground-colour above bright yellow-red with rosy reflection; both wings above deep black at the base; forewing with black apical spot about 4 mm. in breadth, which passes posteriorly into a fine marginal line; no marginal spots. The ♀ with duller, more yellowish ground-colour. Rhodesia to British East Africa. — ♀-ab. **emini** Weym. is larger and has the forewing above not or little darkened at the base. German East Africa. — f. **brunnea** Eltr. (60 f) only differs in the brown ground-colour of the upper surface; sexes similar. Angola; Rhodesia; German East Africa.

**A. anemosa** Hew. Forewing above ochre-yellow to orange-yellow, at the base deep black to vein 2, the black colour sharply defined, at the distal margin with sharply defined black apical spot about 4 mm. in breadth and fine marginal line; a small median dot; discal dots 4 to 6 large and connected, 1 b to 3 usually small or absent, the dot in 1 b placed somewhat nearer to the distal margin than that in 2; hindwing above at the base and at the distal margin broadly black, and with a reddish yellow, unspotted median band. Forewing beneath coloured and marked as above; hindwing at the base and in the marginal band dotted with white; median band reddish white, proximally and distally with large red spots, which meet at the inner margin. Damaraland, Transvaal, Rhodesia; Portuguese, German and British East Africa. **arcticincta** Btlr. (54 c). Marginal band of the hindwing narrower, 4 to 6 mm. in breadth. Among the type-form. — ab. **interrupta** Thur. The red-yellow ground-colour of the forewing encroaches as a narrow wedge-shaped spot into the black basal area of the cell, so as to form an elongate, quadrangle black spot 2 mm. in breadth. Uganda. — ab. **mosana** Suff. Forewing without median spot and without discal dots in 1 b, 2 and 3. — ab. **dubiosa** Suff. Hindwing above (not beneath) with small discal dots. German and British East Africa. — ab. **ufipana** Strand only differs in having the median spot and discal dots 1 b and 2 of the forewing large and strongly developed. German East Africa and Rhodesia. — In ab. **discoguttata** Strand the forewing has "2 or 3 small dark round spots behind the costal spot in cellules 2 and 3". — ab. **urungensis** Strand. Both wings above with but little black at the base; marginal band of the hindwing beneath with white spots, which are surrounded by the red post-discal spots. German East Africa.

**A. welwitschi** so nearly approaches *anemosa* that it seems to me to be scarcely an independent species. The sole difference consists in the forewing having a dark marginal band extending from the apex to the hinder angle and becoming gradually narrower posteriorly. In some forms this band is so narrow behind vein 4 that it is little broader than the marginal line in *anemosa*. Such forms can only be distinguished from *anemosa* by having the hindwing above white in the middle. — **welwitschi** Rogenh. (54 d; 60 g). ♂. Forewing orange-red, above more or less black at the base and with black marginal band, often dentate proximally, at vein 2 still about 2 mm. in breadth; hindwing with white median band and very broad black marginal band, ill-defined proximally. In the ♀ the forewing has a dull ochre-yellow ground-colour and a narrower marginal band; median band of the hindwing yellowish, only in the middle whitish, and above much broader than in the ♂. Angola. — **alboradiata** Auriv. (54 c). Forewing above light orange-yellow, before the apex with whitish rays; marginal band very narrow, especially posteriorly; hindwing above but little darkened at the base, in the middle



*lobemba*, for the most part white. Zambezi: at the Victoria Falls. — *lobemba* *Eltr.* (54 c; as *welwitschi*). Both wings above with bright cherry-red ground-colour and at the base broadly black; forewing above at the costal margin black as far as the cell and with broad black marginal band; discal dots 3 to 6 united into a broad black transverse band, confluent with the costal border; median spot and discal dot 2 large. The ♀ with brown-yellow ground-colour. North Rhodesia and southern Congo.

*chilo*. **A. chilo** *Godm.* (55 a; and 54 c, as *barberi*). The basal dot in 1 c and the discal dots in 2 to 4 of the forewing all four stand in a line running almost parallel with the costal margin. In this *chilo* and the following species differ from all the rest of the subgroup. Such an arrangement of these dots is also very rare among the other African Acraeids, only occurring in *niobe*, *hypoleuca*, *anacreon*, *mirifica* and approximately also in *wigginsii* and *neobule*. ♂: forewing above light yellowish red, somewhat rose-coloured, at the base not or little darkened; forewing with the marginal band spotted with orange-yellow, 3 to 6 mm. broad, of uniform breadth or widened at the apex, a basal dot in 1 b, 2 in the cell, a median spot and large discal dots in 1 b to 6, of which the dot in 1 b is placed much nearer to the distal margin than the one in 2; hindwing above with indistinctly spotted marginal band 3 mm. in breadth and distinct discal dots, the one in 4 placed nearer to the distal margin than the rest and the one in 2 near the base of the cellule. Forewing beneath almost as above, but with whitish subapical band between discal dots 4 to 6 and the marginal band; hindwing beneath whitish yellow with some red spots in 1 a to 1 c and at the base of the costal margin and with large whitish marginal spots. In the ♀ the forewing is hyaline with smaller black dots and larger orange-yellow marginal spots; hindwing as in the ♂, but more thinly scaled and lighter-coloured and also above with large, often black-dotted, yellow spots in the marginal band. Kilimandjaro; British East Africa; Somaliland and Abyssinia. ♀-ab. **crystallina** *Smith* (54 a) is an extreme form of the ♀, in which both wings are hyaline, only at the base slightly yellowish, and the forewing lacks all the black dots and also the marginal band. On account of the lack of markings this clue to the identification of this form with *chilo* fails, and the proof must depend on a comparison of several intermediate forms. *ELTRINGHAM* regards *crystallina* as the typical ♀ of *chilo*, but as *GODMAN* described and figured, at the same time as the ♂, another ♀ much more nearly agreeing with it, this latter form must be regarded as typical. Kilimandjaro and British East Africa.

*oscari*. **A. oscari** *Rothsch.* (60 d). Wings above dull red with black marginal band of uniform breadth, on the forewing 5 mm. and enclosing large yellowish marginal spots, on the hindwing only 3 mm. and indistinctly spotted; forewing broad and rounded, above but little black at the base; hindwing above deep black at the base as far as vein 2 and then whitish to the apex of the cell; the black spots of both wings very large and arranged quite as in *chilo*; wings beneath almost as above, but the hindwing broadly whitish in the middle. In the ♀ the ground-colour is brownish white. Abyssinia.

### Sixth Subgroup.

This subgroup has been formed for those species in which the marginal band of the hindwing is entirely absent, at least beneath, being only represented by a very fine black line. The light marginal spots are likewise absent or are at least not bordered with black proximally, forming a light band. In some species or seasonal forms of the preceding subgroups a similar result sometimes arises from the reduction of the black markings and as these forms might be looked for here they are included in the synopsis of the species.

### Synopsis of the Species.

#### I. Forewing with free discal dots.

A. Discal dots 1 b to 5 of the hindwing are placed in an almost straight transverse line.

*A. rahira* and *zitja*.  
(cf. p. 262, 266, 267.)

B. Discal dots 1 b to 5 of the hindwing are not placed in a straight line.

a) The discal dot in 1 b of the forewing stands directly behind the one in 2. Discal dots 3 and 5 of the hindwing are placed nearer to the distal margin than the one in 4.

1. Hindwing on both surfaces only with fine black marginal line. Forewing above entirely or for the most part blackish.

*A. asboloplintha*.

2. Hindwing above with black marginal band 2 mm. in breadth. Forewing above with orange-yellow ground-colour.

*A. atergatis*.

(cf. p. 268.)

b) The discal dot in 1 b of the forewing stands nearer to the distal margin than the one in 2.

1. Forewing without submarginal dots.

*A. atolmis*.

(cf. p. 274.)



2. Forewing with submarginal dots in 1 b and 2.

*A. rohlfsi.*

(cf. p. 277.)

II. Forewing entirely without free black dots. Hindwing beneath at the distal margin with broad red-brown band.

a) Hindwing above with large red-yellow, black-bordered marginal spots. The discal dots of the hindwing are all placed nearer to the base than to the apex of the cell.

*A. amicitiae.*

(cf. p. 259.)

b) Hindwing above with narrow black, unspotted marginal band and at the base black to the apex of the cell. Forewing red-yellow without spots to the apex of the cell, then semitransparent smoky black with ill-defined whitish subapical spots in 4 to 6.

*A. baxteri.*

**A. asboloplintha** *Karsch* (54 a). Forewing above unicolorous dark smoky black with indistinct discal dots and occasionally at the hindmargin in the middle of 1 a with red-yellow scaling, beneath light yellowish brown with distinct discal dots, black fringes and very fine marginal line. Hindwing above light orange-yellow, at the base black as far as vein 2 and with free black discal dots and black fringes, beneath at the base and inner margin red, then light yellowish and beyond the discal dots with light orange-yellow transverse band 4 mm. in breadth, which does not reach the distal margin, so that a light yellowish transverse band is formed. In the ♀ the hindwing above is often yellow-brown instead of orange-yellow. Ruwenzori, Uganda and British East Africa. — **rubescens** *Eltr.* differs in having the hindwing above rose-coloured, while the forewing has a hind-marginal spot of the same colour, which covers the base of cellule 2 and also a part of the cell. In the ♀ the corresponding parts are white. British East Africa. This very distinct species possibly belongs best to the second subgroup.

*asboloplintha.*

*rubescens.*

**A. baxteri** *E. Sharpe* (54 a). Forewing entirely without black dots, in the basal part yellow-red to reddish as far as the apex of the cell and the middle of cellule 2, in the apical part blackish with three whitish, semitransparent spots in 4 to 6. The discal dots of the hindwing are all present, almost touch one another and stand in a curved row, which runs close to the apex of the cell; hindwing above black as far as the discal dots. Distal half yellow-red with narrow, unspotted, black marginal band; beneath in the basal part as far as the discal dots coffee-brown with distinct black dots, then reddish white and at the distal margin with rust-brown marginal band 3 mm. in breadth and black fringes. *ELTRINGHAM* refers *baxteri* to the first group, which is characterized by black streaks on the interneural folds of the hindwing beneath; these streaks are, however, entirely absent both in the figure of the typical example and in the specimens before me. In colour and markings *baxteri* comes so extremely close to *A. insignis* in the following subgroup that I can only regard the two species as nearly allied. Only the fact that the black marginal band of the hindwing beneath is entirely absent in *baxteri*, but in *insignis* distinct though narrow, has led me to include *baxteri* here and not in the seventh subgroup. Nyassaland, German and British East Africa. — ab. **fuellborni** *Thur.* has the light subapical spots of the forewing larger and the marginal band on the upperside of the hindwing about 2 mm. in breadth. Nyassaland. In ab. **subsquamia** *Thur.* the wings are more densely scaled and the red colour on the upperside of the hindwing extends nearly to the base of cellules 4 to 6. Usambara.

*baxteri.*

*fuellborni.*

*subsquamia.*

#### Seventh Subgroup.

Forewing in the apical part hyaline or at least with hyaline subapical area; occasionally the whole wing hyaline or in the basal part hyaline and distally thinly scaled or entirely smoke-brown without any markings except a median spot. Hindwing with black spots at the extremities of the veins or with dark marginal band. It may easily happen that some species which evidently belong to other subgroups may be looked for here; these are therefore included in the synopsis.

#### Synopsis of the Species.

I. Hindwing above with continuous, unicolorous or light-spotted dark marginal band.

A. Abdomen long, much longer than the hindwing, the posterior half white.

*A. braesia.*

(cf. p. 271.)

B. Abdomen not or but little longer than the hindwing, the posterior half not white.

a. Hindwing without black submarginal dots.

\*. Forewing in the basal part hyaline. Hindwing above unicolorous black or with an elongate blood-red area.

*A. cinerea.*

(cf. p. 256.)

\*\*. Forewing in the basal half or at least close to the base clothed with yellow, red or black scales.



§. Hindwing on both surfaces with narrow, sharply defined, unspotted black marginal band.

*A. insignis.*

(cf. also *A. kakana*, p. 287.)

§§. The marginal band of the hindwing at least beneath with light spots.

0. The discal dots of the hindwing strigiform and united into a very irregular transverse band. Also the forewing traversed by a curved blackish band from the middle of the costal margin to the hindmargin near the tornus.

*A. satis.*

00. The discal dots of the hindwing free and rounded.

†. The basal dots of the hindwing beneath in cellules 1 a to 1 c and in the cell joined together and enclosing 2 to 4 light spots. Forewing at the end of the cell with black transverse spot or streak.

1. Forewing unicolorous smoke-brown, semitransparent, without spots or discal dots.

*A. camoena.*

2. Forewing in the basal part usually red-yellow and in the apical part hyaline, occasionally smoky, but then with hyaline subapical area and light marginal spots or sometimes completely scaled with red-yellow.

a. Forewing with discal dots in 4 to 6. Marginal spots of the hindwing rounded.

a'. Forewing at least with hyaline subapical area *A. neobule.*

b'. Forewing fully scaled, red-yellow. *A. zambesina.*

b. Forewing without discal dots at least in 4 to 6. Marginal spot of the hindwing small, transversely placed.

*A. horta.*

††. The basal dots of the hindwing beneath entirely free.

—. Forewing with transverse streak at the end of the cell. *A. arabica.*

—. Forewing without transverse streak at the end of the cell.

Λ. Hindwing scaled or but little hyaline.

1. Hindwing above with broad black, sharply defined marginal band, which encloses large circular spots of the yellow-red ground-colour.

*A. admatha.*

2. Marginal band on the hindwing above not sharply defined.

a) Hindwing beneath with red submarginal band and whitish marginal spots. *A. lia.*

b) Hindwing beneath without red submarginal spots. Marginal band on both surfaces with indistinct yellowish marginal spots.

*A. obeira.*

ΛΛ. Hindwing hyaline except at the base and the distal margin. Forewing almost entirely hyaline.

*A. crystallina.*

(cf. p. 282.)

b) Hindwing with large, rounded black submarginal dots, which proximally bound the red or yellowish marginal spots.

\*. Forewing with reddish scaling at least to the apex of the cell. *A. machequena.*

\*\*. Forewing with red or yellowish scaling only as far as vein 2. *A. ranavalona.*

II. Hindwing at the distal margin only with black spots at the extremities of the veins. Discal dots 2 to 4 of the forewing stand in a straight line.

a) A larger species (62 to 75 mm.); hindwing with both discal and submarginal dots. The discal dot in 1 b of the forewing placed nearer to the distal margin than the one in 2. *A. hova.*

b) A smaller species; hindwing without submarginal dots. The discal dot in 1 b of the forewing placed directly behind the one in 2. *A. mahela.*

*insignis.*

*A. insignis* Dist. (53 e). Forewing above scaled with red-yellow to the apex of the cell and the hinder angle, in the apical part transparent black-grey, at the end of the cell with a black transverse streak, otherwise without markings. Hindwing red-yellow with narrow black, unspotted marginal band about 1 mm. in breadth, which beneath is often grey at the distal margin, at the base with large confluent black spots and with large discal dots in 1 b to 2, of which the one in 2 covers the base of the cellule, and with a thick black transverse streak at the end of the cell; the discal dots in cellules 3—7 are entirely absent; beneath as above, but much lighter reddish white with a red band at the proximal side of the black marginal band. In the ♀ the ground-colour is often grey-yellowish. Nyassaland; German and British East Africa; Uganda. f. *siginna* Suff. (54 a) is characterized by having the black spots in the basal part of the hindwing united into a large, deep black patch, which also covers the base of cellules 3 to 6. German and British East Africa, especially in the high-lying localities.

*siginna.*

*satis.*

*A. satis* Ward (54 a). Wings above in the ♂ light red-yellow or brown-yellow, in the ♀ white and very thinly scaled. Forewing at the costal margin narrowly black, at the distal margin broadly hyaline with some

black scales; the base of cellules 4 to 6 is broadly yellow (♂) or white and distally bounded by the (sometimes indistinct) discal dots of these cellules; the median spot at the end of the cell is very thick and forms with the streak-like discal dots of cellules 3 to 1 b a curved transverse band; beyond the middle of the cell a black transverse band, which is often joined to the median spot. Hindwing in cellules 1 b to 7 with strigiform, thick discal dots, which form with the outer basal dots of cellules 1 a to 1 c and the median spots an irregular transverse band enclosing light spots in cellules 1 a to 2 and 4 to 6; the black marginal band broad with large yellowish or white marginal spots. Rhodesia; Zululand; German and British East Africa. This very distinct species recalls *A. rabbaiae* and *zonata* in the markings and is grouped together with them by ELTRINGHAM.

**A. camaena** Drury (53 f). Forewing unicolorous smoke-black with black median spot but otherwise *camaena*. entirely without markings. Hindwing beyond the middle smoke-black with large free basal and discal dots, before the marginal band yellowish; marginal band incised at the veins, deep black with white dots. Sierra Leone to Nigeria and Fernando Po.

**A. neobule** Dbl. & Hew. (53 f). Forewing above thinly scaled with light orange-yellow or ochre-yellow *neobule*. as far as the discal dots in 4 to 6 and in addition often at the distal margin in cellules 5 to 8, otherwise in the apical part hyaline; a spot beyond the middle of the cell, a transverse streak at the end of the cell and the discal dots often distinct, the discal dots in 2 and 3, however, not seldom wanting. Hindwing on both surfaces orange-yellow with distinct discal dots, of which the one in 4 is nearer to the distal margin than the rest; marginal band 1 to 1.5 mm. in breadth with rounded light marginal spots. Throughout South and East Africa to Angola, Rhodesia, Soudan and Abyssinia. — **socotrana** Rbl. differs in the *socotrana*. black-scaled apex of the forewing and the larger black basal and discal dots. Socotra; as an aberration also in Rhodesia. — **seis** Feisth. has the forewing scaled with yellow in cellules 1 a to 2 as far as the distal *seis*. margin and in cellules 3 to 8 distinct yellow marginal spots and consequently only in cellules 3 to 6 a hyaline subapical band; occasionally the yellow is replaced by black-grey or dark brown, especially in the ♀. Senegal to Nigeria, particularly in the interior.

**A. zambesina** Auriv. is very similar to *A. neobule*, but has the forewing completely scaled with red- *zambesina*. yellow without diaphanous subapical area but with narrow marginal band 1 mm. in breadth, triangularly widened at the extremities of the veins; discal dots of both wings as in *neobule*; on the underside of the hindwing the white basal dots are smaller and of almost uniform size. Portuguese East Africa: Zumbo to the Zambezi River. Perhaps only an extreme form of *neobule*.

**A. arabica** Rbl. completely agrees above with the race *seis* of *neobule*, but differs from all the *neobule*- *arabica*. forms in having the basal dots on the underside of the hindwing smaller and placed quite free; marginal spots of the hindwing small and elongate almost as in *horta*. South Arabia.

**A. horta** L. (53 e, f) is one of the longest known and commonest Acraeids of the Cape. The ♂ is similar *horta*. to that of *neobule*, but differs in having the black dots of the forewing absent or only represented by a dot in the cell and another in 1 b, the marginal spots of the hindwing small, elongate and incompletely separated from the ground-colour and the hindwing beneath red at the inner margin and the marginal band. In the ♀ the forewing is almost entirely hyaline and the hindwing above light yellow to grey-yellow, beneath whitish with larger marginal spots, bounded by distinct lunules. Larva brown-yellow with black transverse lines and yellow lateral and dorsal lines; head and spines black; lives on *Kigellaria africana* and various *Passiflora*. Cape, Natal, Zululand, Transvaal and Pondoland. ♀-ab. **conjuncta** Blachier is distinguished by having *conjuncta*. the discal dots of the hindwing changed into long, broad black stripes.

**A. admatha** Hew. (53 e). Forewing as far as vein 2 or 3 rose-coloured or brick-red, then smoky and *admatha*. transparent, discal dots 1 b to 5 and a dot in the cell usually more or less distinct, but never sharply prominent; hindwing above with red ground-colour and sharply prominent basal and discal dots and broad black marginal band with large red marginal spots; beneath marked as above but with light, reddish white ground-colour. In the ♀ the red parts of the ♂ are dirty yellowish grey or grey-brown. Sierra Leone to Natal and British East Africa. — ab. **leucographa** Ribbe (53 e) only differs in having cellules 1 b to 2 of the hind- *leucographa*. wing white between the discal dots and the marginal band. Sierra Leone to Abyssinia and British East Africa.

**A. lia** Mab. (53 e) is very similar to the preceding species above, but smaller, with the marginal band of *lia*. the hindwing narrow, only 1 mm. in breadth, without spots or only indistinctly spotted, and the discal dots placed nearer to the cell. Beneath the hindwing has white marginal spots and large red spots both at the proximal side of the marginal band and usually also between the discal and basal dots. Madagascar.

**A. obeira** Hew. (53 d) differs from *lia* in having the marginal band of the hindwing broader but *obeira*. not sharply defined, adorned with red or yellowish marginal spots and on the under surface not bounded proximally by red spots; in the ♂ the forewing is red-yellow at the base as far as vein 2 or 3, in the ♀ almost entirely hyaline; the hindwing is red-yellow (♂) or whitish yellow (♀) from the base to the discal dots, then



- hyaline as far as the marginal band or only scaled in cellules 1 c to 2, 6 and 7; discal dots 2 to 7 of the hindwing usually large and confluent. Madagascar. — *burni* *Btlr.* only differs in the ♂ having the forewing to the apex of the cell and the hindwing as far as the marginal band scaled with light ochre-yellowish. Natal.
- ranavalona.* **A. ranavalona** *Bdv.* (53 c, d). Forewing at the base as far as vein 2 bright red (♂) or almost completely hyaline (♀); hindwing with grey, often semitransparent, red-spotted marginal band, the red marginal spots proximally bounded by sharply defined black submarginal dots; basal and discal dots distinct; ground-colour beneath white, above in the ♂ bright red, in the ♀ white or whitish. Madagascar and Comoros. ♀-ab. **manandaza.** **nandaza** *Ward* (53 d). Ground-colour of the hindwing more or less reddish. Madagascar. ab. **maransetra.** **maransetra** *Ward*. The discal dots of the hindwing united into a transverse band. Madagascar.
- machequena.* **A. machequena** *Smith* (53 d) only differs from *ranavalona* in having the forewing at least in the ♂ scaled with red-yellow to the apex of the cell and the upperside of the hindwing in the ♂ with yellowish instead of red scaling. Delagoa Bay, Nyassaland and Rhodesia.
- mahela.* **A. mahela** *Bdv.* (53 c). Both wings thinly scaled, with light ochre-yellow ground-colour; forewing diaphanous in the distal part as far as the discal dots and with distinct discal dots in 1 b to 6, a transverse streak at the end of the cell and a dot in the cell; hindwing with free basal and discal dots and small black spots at the distal margin on the extremities of the veins, both surfaces quite similarly coloured and marked. The sexes are quite similar. Madagascar.
- hova.* **A. hova** *Bdv.* (53 c) is a large and beautiful species, characterized by the hindwing having a complete row of submarginal dots and very small or even indistinct marginal spots at the extremities of the veins, while the basal dots are placed close to the base and are widely separated from the discal dots; the forewing has usually large and distinct discal dots in (1 a) 1 b to 6, a basal dot in 1 b, a dot in the cell and a transverse spot at the end of the cell. Forewing above at least to the discal dots brick-red, then hyaline, occasionally in the ♀ almost entirely hyaline; hindwing above red, at the inner margin yellowish or sometimes in the ♀ yellowish white. Madagascar.

#### E i g h t S u b g r o u p.

In the species of this subgroup the hindwing has the marginal band unspotted, hyaline or at least thinly scaled and semi-transparent. Only a few species of the first group (e. g. *orestia* and *quirinalis*) show a similar design. In these, however, there are dark streaks on the interneural folds, which are wanting in the present subgroup. The forewing is hyaline at least in the distal part.

#### S y n o p s i s o f t h e S p e c i e s.

##### I. Hindwing with 1 or 2 black dots in the cell.

- A. The hyaline or transparent marginal band of the hindwing is narrow or of moderate breadth and usually much narrowed towards the anal angle, proximally often sharply defined.
- a. The forewing with a black dot or spot in the cell and occasionally also with discal dots in 1 b and 2. The hindwing with distinct free basal and discal dots. Forewing at the base red-yellow almost to the apex of the cell.
1. Veins 6 and 7 of the hindwing stalked. *A. iturina.*
  2. Veins 6 and 7 of the hindwing not stalked.
    - a) The red-yellow colour at the base of the forewing distally bounded by a curved black-grey transverse band; marginal band of the hindwing dark, sharply defined and very narrow, about 1 mm. in breadth. *A. cerita.*
    - b) The red-yellow colour of the forewing not distally dark-margined; marginal band of the hindwing ill-defined and anteriorly widened, in cellule 6 about 3 to 4 mm. in breadth. *A. cerasa.*
- β. The forewing entirely without black dots or spots. Marginal band of the hindwing sharply defined.
1. The hindwing entirely without black dots except 1 or 2 in the cell. *A. unimaculata.*
  2. The hindwing with well developed basal and discal dots:
    - a) Marginal band of the hindwing broad and hyaline. Hindwing with small free discal dots and submarginal dots at least in 1 b, 1 c and 2. *A. quirina.*
    - b) Marginal band of the hindwing narrower and dark, blackish. Discal dots of the hindwing large and united into a transverse band. *A. kakana.*
- B. The marginal band of the hindwing is very broad, occupying a third to nearly half of the wing, indistinctly defined proximally.
- a. Both wings almost hyaline without black dots or other markings, only with a dot in the cell of the hindwing. *A. humilis.*

(see p. 256.)

- b. Hindwing scaled in the basal part and with distinct basal and discal dots.
1. Forewing at the base as far as vein 2 and hindwing at least to the apex of the cell scaled with whitish yellow (♂) or red-yellow. Forewing with a dot in the cell and with 1 or 2 dots in 1 b, hindwing with submarginal dots in 1 c and 2. *A. kraka.*
  2. Forewing to the base somewhat smoky, transparent, without markings or merely with a transverse spot at the end of the cell. Hindwing to beyond the middle whitish or whitish yellow, occasionally yellow-brown, without submarginal dots. *A. eugenia.*
- II. Cell of the hindwing without black dots or only black in the extreme basal angle. Hindwing beyond the middle in 2, 3, 5, 6 and 7 with a curved row of 5 large deep black spots.
- A. Hindwing in cellule 7 with a large black spot directly before the spot in 6, but without other spots in 7. Basal area of the wings in the ♂ ochre-yellow to brown-yellow, in the ♀ whitish. *A. igati.*
  - B. Hindwing in cellule 7 with a large black spot, which is placed much nearer to the base than the spot in 6 and occasionally also with a small spot directly before the spot in 6. Basal area of the wings in the ♂ brick- to rose-red, in the ♀ white, reddish or brownish. *A. dammii.*

**A. kakana** *Eltr.* (60 e) is unknown to me, but is given by ELTRINGHAM first as a variety (race) of *iturina kakana*. and then as a probably independent species. From the figure and description the latter view seems to me to be the correct one. Forewing narrowly black at the base and the costal margin, semitransparent blackish in the apical half; the rest of the wing as far as the apex of the cell orange-red without dots or spots. Hindwing above orange-red with blackish marginal band about 2 mm. in breadth, towards the anal angle gradually narrowing to a point, almost confluent basal dots and large discal dots, broadly separated from the basal and united into a nearly straight median transverse band, the dots in cellules 2 to 4 triangular and occupying the entire base of their cellules; the spot in 3 is thus placed much nearer to the distal margin than the others, which almost touch one another at the apex of the cell. Under surface like the upper, but much paler, particularly on the hindwing. Abyssinia.

**A. iturina** *Smith.* Forewing hyaline, darkened at the costal and distal margins, red to red-yellow *iturina*. at the base as far as vein 3; this colour does not reach the apex of the cell and encloses a dark spot in the cell and occasionally also a discal dot in 2. Hindwing red-yellow with grey marginal band 2 to 3 mm. in breadth and free basal and discal dots, arranged almost as in *kakana*. Cameroons, Congo and Uganda. This species differs from the following in having veins 6 and 7 of the hindwing stalked.

**A. cerita** *E. Sharpe* (60 e). Of this species only one specimen is known; it is very closely allied to *cerita*. *cerasa* and it need only be added to what has been given in the synopsis that the discal dots of the hindwing are small and in cellules 4 to 6 entirely absent. Uganda.

**A. cerasa** *Hew.* (53 b). The red-yellow scaling of the forewing reaches the apex of the cell, is there *cerasa*. bounded by a transverse streak and encloses a black dot in the cell and usually also, especially in the ♀, discal dots, at least in 1 b and 2. Hindwing red-yellow above with transparent marginal band, much narrowed in cellules 1 c and 2, fully developed discal dots and, especially in the ♀, usually also with submarginal dots at least in 1 c and 2. In the ♀ the red-yellow colour is lighter red to light yellow. — Larva above reddish with greenish dorsal line and white dots on the dorsal line and at the lateral edge of the red colour, on the sides olive-green, beneath light green; head black; dorsal spines dark grey; on segments 3 to 6 longer, other spines yellowish to greenish white. Pupa light orange-yellow with black dots and lines. Natal to British East Africa.

**A. unimaculata** *Smith* differs from all the other species in having the black dots entirely absent on both *unimaculata*. wings except for 1 or 2 in the cell of the hindwing beneath. The forewing to vein 2 or 3, the hindwing to the marginal band, scaled with orange-yellow; apex of the cell of the forewing hyaline. British East Africa.

**A. quirina** *F.* (53 b). Forewing diaphanous without markings, only in 1 a and at the base of 1 b *quirina*. scaled with red-yellow or red. Hindwing rose-red to orange-yellow with free basal and discal dots and at the edge of the red-yellow colour often with submarginal dots in all the cellules; marginal band broad and diaphanous. In the ♀ the red-yellow colour is usually replaced by dirty yellow-grey. Sierra Leone to British East Africa. — **rosa** *Eltr.* only differs in having the basal part of the forewing above scaled with red or red-yellow *rosa*. to the apex of the cell and almost to the anal angle. British East Africa.

**A. eugenia** *Karsch* (53 b). Forewing diaphanous or somewhat smoky and entirely without markings. *eugenia*. Hindwing above whitish or slightly yellowish to the discal dots, with basal and discal dots but without submarginal ones; marginal band somewhat smoky and at least 6 mm. in breadth. Togoland and Angola. — **ochreata** *Grünb.* Wings darker and more densely scaled; forewing with distinct transverse spot at the apex *ochreata*. of the cell; hindwing from the base to beyond the middle scaled with yellow-brown on both surfaces. Spanish Guinea.

**A. kraka** *Auriv.* (53 b). Forewing to vein 2 and hindwing to the discal dots whitish yellow (♂) or *kraka*.



brown-yellow (♀) (not black-grey as in the figure), otherwise hyaline; forewing usually with a black dot in the cell and with discal dots in 1 b and 2; hindwing in addition to the basal and discal dots usually with submarginal dots in 1 e and 2; marginal band diaphanous, 9 to 11 mm. in breadth. Cameroons, Fernando Po and Congo region in the primeval forests near Mawambi.

- dammii*. **A. dammii** Vollenh. (53 b). Forewing to the apex of the cell and hindwing not or scarcely beyond the black spots scaled with red (♂) or white (♀); the hyaline marginal band of the hindwing is consequently broad, reaching the black spot in 3; the large black spot in 7 is placed much nearer to the base than the one in 6.
- cuva*. Madagascar. — **cuva** Smith (57 a) differs in having the red (♂) or dirty yellow (♀) sealing on both wings extended much further distad; hence the hyaline marginal band of the hindwing is only about 2 mm. in breadth;
- nidama*. hindwing usually with 6 to 8 discal dots, occasionally only with 5, ab. **nidama** Suff. German and British East Africa.
- igati*. **A. igati** Bdv. (53 a) is very similar to the preceding species, only differing from it in the characters given in the synopsis. Madagascar.

### Third Group.

This group embraces only two Ethiopian species, which differ from all other *Acræids* in having the basal half of the hindwing entirely without markings, the basal dots being entirely absent. An approach to this occurs in the second group in *A. humilis* and *unimaculata*, where occasionally only a single basal dot is present in the cell.

- rabbaiae*. **A. rabbaiae** Ward (53 a). Forewing diaphanous with a black basal dot in 1 b and with discal dots in (1 a) 1 b to 6, 10 and 11, which beneath are united with one another and with a spot in the apex of the cell, forming a black transverse band; the veins at the distal margin black and in cellules 4 to 7 bordering large but indistinct light yellowish marginal spots. Hindwing very thinly scaled, whitish, with black, light yellow-spotted marginal band 2 to 3 mm. in breadth and entirely without other markings. Delagoa Bay to British East Africa and Rhodesia. — **mombasae** Smith only differs in having the hindwing and partially also the forewing scaled with very light brown-yellow instead of white and the discal dots of the forewing smaller and often indistinct. German East Africa.
- zonata*. **A. zonata** Hew. (53 a). Wings brown-yellow with black veins and triangular black spots at the extremities of the veins; forewing with black costal margin, a large black spot in the cell, a discal and a submarginal curved transverse band, which are united at the hindmargin near the hinder angle; these transverse bands are continued on the hindwing by a single band which runs somewhat behind the middle. A rare species, hitherto only met with in German and British East Africa.

### 3. Genus: **Pardopsis** Trim.

The great peculiarities of this genus were entirely overlooked by the earlier authors down to SCHATZ. To the eminent English lepidopterist R. TRIMEN belongs the credit of having first clearly shown the differences between *Acræa* and *Pardopsis*. The most important difference from *Acræa* consists in vein 6 of the forewing being separated from the stalk of veins 7 to 10 by a long and very obliquely placed upper discocellular and arising from the same point as vein 5. Such a structure of the cell occurs in no other genus among the Nymphalids or *Acræids*, but it strongly recalls the cell of the Lycaenid genus *Pentila*, some of the species of which, curiously enough, are also very suggestive of *Pardopsis* in colouring and markings. A real relationship of the two genera seems, however, to be scarcely conceivable and one would consequently endeavour to attribute the resemblance to mimicry. But why the species mimicked should be more like the mimic in the structure of the cell than to its nearest allies is a problem which in the present state of our knowledge cannot be explained. ELTRINGHAM seems inclined to remove the genus *Pardopsis* from the *Acræids* and erect for it a separate family or subfamily of the Nymphalids. So long as the early stages remain unknown it seems to me best to place *Pardopsis* among the *Acræids*, with which it agrees in the fully closed cells, the position of vein 10 of the forewing and the structure of the forelegs and of the abdomen.

- punctatissima*. **P. punctatissima** Bdv. (53 a). Both wings ochre-yellow or brown-yellow with completely (cf. p. 246) developed, rounded black basal, median, discal, submarginal and marginal dots and with a black marginal line, which at the apex of the forewing is widened into an apical spot. Cape to Somaliland, Uganda and Abyssinia; Madagascar.



## Alphabetical List

with reference to the original descriptions of the forms of the African Acraeidae.

\* signifies that the form is also figured at the place cited.

- abadima* Acraea *Ribbe* Iris 2, p. 182. \*  
*abdera* Acraea *Hew.* Exot. Butt. Acraea 1. \*  
*abrupta* Acraea *Grünb.* Sitz.-Ber. Nat. Fr. Berl. 1910, p. 163. \*  
*acara* Acraea *Hew.* Exot. Butt. Acraea 3. \*  
*acerata* Acraea *Hew.* Ann. Mag. Nat. Hist. (4) 13, p. 381.  
*aeontias* Acraea *Westw.* Oates Matebele Land, p. 345. \*  
*acrita* Acraea *Hew.* Exot. Butt. Acraea 3. \*  
*acritoides* Acraea *Eltr.* Nov. Zool. 18, p. 153.  
*acronycta* Acraea *Westw.* in Oates Matabele Land, p. 346 \*  
*admatha* Acraea *Hew.* Exot. Butt. Acraea 3.  
*adrasta* Plan. *Weym.* Stett. Ent. Ztg. 53, p. 85.  
*aequalis* Acraea *Rothsch. & Jord.* Nov. Zool. 12, p. 184.  
*aethiops* Acraea *Rothsch. & Jord.* Nov. Zool. 12, p. 183.  
*aganice* Plan. *Hew.* Exot. Butt. Acraea 1. \*  
*aglaonice* Acraea *Westw.* Oates Matebele Land, p. 346. \*  
*alberta* Acraea *Eltr.* Nov. Zool. 18, p. 151.  
*albicolor* Plan. *Karsch* Ent. Nachr. 21, p. 280.  
*albida* Acraea *Auriv.* in Seitz, Macrolep. 13, p. 268.  
*albinaculata* Acraea *Neave* Nov. Zool. 11, p. 329.  
*albofasciata* Acraea *Auriv.* in Seitz, Macrolep. 13, p. 270.  
*alboradiata* Acraea *Auriv.* Rhop. Aethiop., p. 91.  
*alboradiata* Acraea *Suff.* Iris 17, p. 28.  
*alcinoe* Plan. *Fldr.* Reise Novara Lep., p. 368. \*  
*alciope* Acraea *Hew.* Exot. Butt. Acraea 1. \*  
*alcippina* Acraea *Auriv.* Rhop. Aethiop., p. 111.  
*alicia* Acraea *E.-Sharpe* Ann. Mag. Nat. Hist. (6) 5, p. 442.  
*althoffi* Acraea *Dewitz* Ent. Nachr. 15, p. 102. \*  
*ambigua* Acraea *Trim.* Proc. Zool. Soc. Lond. 1891, p. 70. \*  
*amietiae* Acraea *Heron* Trans. Zool. Soc. Lond. 19, p. 148. \*  
*amphiprotea* Acraea *Bltr.* Trans. Ent. Soc. Lond. 1874, p. 428.  
*anaereon* Acraea *Trim.* Trans. Ent. Soc. Lond. 1868, p. 77. \*  
*anaereontica* Acraea *Smith* Nov. Zool. 5, p. 352.  
*anaemia* Acraea *Eltr.* Trans. Ent. Soc. Lond. 1912, p. 179. \*  
*anemosa* Acraea *Hew.* Exot. Butt. Acraea 3. \*  
*angolana* Acraea *Lathy* Trans. Ent. Soc. Lond. 1906, p. 3. \*  
*angulata* Plan. *Suff.* Iris 17, p. 38.  
*angustifasciata* Plan. *Grünb.* Sitz.-Ber. Ges. Nat. Fr. Berl. 1910, p. 165.  
*ansorgei* Acraea *Smith* Nov. Zool. 5, p. 351.  
*antinorii* Acraea *Oberth.* Ann. Mus. Gen. 15, p. 157.  
*apecida* Acraea *Oberth.* Etudes d'Ent. 17, p. 23. \*  
*aquila* Acraea *Thurau* Berl. Ent. Ztschr. 48, p. 129. \*  
*aquilina* Acraea *Strand* Mitt. Zool. Mus. Berl. 5, p. 281.  
*arabica* Acraea *Eltr.* Trans. Ent. Soc. Lond. 1912, p. 173. \*  
*arabica* Acraea *Rebel* Denkschr. Akad. Wiss. Wien 71: 2, p. 58. \*  
*arcticineta* Acraea *Bltr.* Ann. Mag. Nat. Hist. (5) 12, p. 103.  
*areca* Acraea *Mab.* Ann. Soc. Ent. France (6) 8 Bull., p. 169.  
*arenaria* Plan. *E. Sharpe*, Entomolog. 35, p. 135.  
*argentea* Acraea *Eltr.* Trans. Ent. Soc. Lond. 1912, p. 283. \*  
*artemisa* Acraea *Stoll* Suppl. Cramer, p. 123. \*  
*asbologlintha* Acraea *Karsh* Ent. Nachr. 20, p. 223.  
*ascrepticia* Acraea *Strand* Archiv f. Naturg. 78 A: 1, p. 81.  
*asema* Acraea *Hew.* Ent. Mon. Mag. 14, p. 52.  
*astrigera* Acraea *Bltr.* Proc. Zool. Soc. Lond. 1899, p. 421. \*  
*atergatis* Acraea *Westw.* Oates Matebele Land, p. 342. \*  
*atoluis* Acraea *Westw.* Oates Matebele Land, p. 343. \*  
*aubyni* Acraea *Eltr.* Trans. Ent. Soc. Lond. 1912, p. 304. \*  
*aureola* Acraea *Eltr.* Nov. Zool. 18, p. 149.  
*aurivillii* Acraea *Stgr.* Iris 9, p. 209. \*  
*axina* Acraea *Westw.* Oates Matebele Land, p. 344. \*  
*bakossua* Acraea *Strand* Archiv f. Naturg. 77: 1: 4, p. 144.  
*balina* Acraea *Karsh* Ent. Nachr. 18, p. 170.  
*banka* Acraea *Eltr.* Trans. Ent. Soc. Lond. 1912, p. 226.  
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*bomba* Acraea *Smith* Ann. Mag. Nat. Hist. (6) 3, p. 128.  
*bonasia* Acraea *F.* Syst. Ent., p. 464.  
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*braesia* Acraea *Godm.* Proc. Zool. Soc. Lond. 1885, p. 538.  
*brahmsi* Acraea *Suff.* Iris 17, p. 15. \*  
*brunnea* Acraea *Eltr.* Nov. Zool. 18, p. 151.  
*bukoba* Acraea *Eltr.* Trans. Ent. Soc. Lond. 1911, p. 12. \*  
*burui* Acraea *Bltr.* Ann. Mag. Nat. Hist. (6) 18, p. 467.  
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*büttneri* Acraea *Rogenh.* Ann. Mus. Wien 4, p. 553. \*  
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*camaena* Acraea *Drury* Ill. Exot. Ins. 2, p. 12. \*  
*camerunica* Plan. *Auriv.* Ent. Tidskr. 14, p. 285. \*  
*candida* Acraea *Eltr.* Trans. Ent. Soc. Lond. 1912, p. 173.  
*caoneus* Acraea *Suff.* Iris 17, p. 27.  
*carmentis* Acraea *Doubt. & Hew.* Gen. Diurn. Lep., p. 140. \*  
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*cephens* Acraea *L.* Syst. Na. Ed. 10, p. 487.  
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*cerita* Acraea *E.-Sharpe* Ann. Mag. Nat. Hist. (7) 18, p. 75.  
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*cinerea* Acraea *Neave* Nov. Zool. 11, p. 325. \*  
*circis* Acraea *Drury* Ill. Exot. Ins. 3, p. 24. \*  
*clarei* Acraea *Neave* Nov. Zool. 11, p. 327. \*  
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*confusa* Acraea *Rogenh.* Baumann. Usambara, p. 326.  
*conjuncta* Acraea *Blachier* Bull. Soc. Léop. Genève 2, p. 176. \*  
*conjuncta* Acraea *Smith* Nov. Zool. 5, p. 351.  
*connexa* Acraea *Thurau* Berl. Ent. Ztschr. 48, p. 304.  
*conradti* Acraea *Oberth.* Etudes d'Ent. 17, p. 22. \*  
*cousanguinea* Plan. *Auriv.* Ent. Tidskr. 14, p. 282. \*  
*contraria* Acraea *Grünb.* Soc. Ent. 24, p. 145.  
*contraria* Acraea *Strand* Archiv. f. Naturg. 78 A: 1, p. 81.  
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*dammii* Acraea *Volteuh.* Pollen and Van Dam. Faune Madag. 5, Ins., p. 12. \*  
*decora* Acraea *Weym.* Ent. Ztschr. 15, p. 62.  
*defasciata* Acraea *Suff.* Iris 17, p. 29.  
*depunctella* Acraea *Strand* Int. Ent. Ztschr. 4, p. 226.  
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*dewitzi* Plan. *Stgr.* Iris 9, p. 209.  
*diavina* Acraea *Suff.* Iris 17, p. 31.  
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*discoguttata* Acraea *Strand* Archiv. f. Naturg. 75: 1, p. 376.  
*disjuncta* Acraea *Smith* Nov. Zool. 5, p. 351.  
*dorotheae* Acraea *E.-Sharpe* Entomolog. 35, p. 135.  
*doubledayi* Acraea *Guér.* Lefeb. Voyage Abyssinie 6, p. 378. \*  
*drucei* Acraea *Eltr.* Trans. Ent. Soc. Lond. 1912, p. 251.  
*dubiosa* Acraea *Suff.* Iris 17, p. 20.



- eginia *Acraea* *Cr. Pap. Exot.* 1, p. 64. \*  
 eginopsis *Acraea* *Auriv. Rhop. Aethiop.*, p. 93.  
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 ella *Acraea* *Eltr. Nov. Zool.* 18, p. 151.  
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 emini *Acraea* *Weym. Iris* 16, p. 221. \*  
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 epitellus *Plan. Stgr. Iris* 9, p. 207.  
 equatorialis *Acraea* *Neave Nov. Zool.* 11, p. 327.  
 ertli *Acraea* *Auriv. Ent. Tidskr.* 25, p. 94. \*  
 esebria *Acraea* *Hew. Exot. Butt. Acraea* 2. \*  
 eugenia *Acraea* *Karsch. Berl. Ent. Ztschr.* 38, p. 196.  
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 exalbescens *Acraea* *Eltr. Trans. Ent. Soc. Lond.* 1912, p. 283.  
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 fasciata *Plan. Auriv. in Seitz. Macrol.* p. 13, p. 211.  
 flavescens *Acraea* *Blachier. Bull. Soc. Lepid. Genève*, 2, p. 175. \*  
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*paragea* Plan. *Smith* Nov. Zool. 7, p. 547.  
*parrhasia* Acraea *F.* Ent. Syst. 3: 1, p. 175.  
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*peneleos* Acraea *Ward* Ent. Mon. Mag. 8, p. 60.  
*penella* Acraea *Eltr.* Trans. Ent. Soc. Lond. 1912, p. 283. \*  
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*pentapolis* Acraea *Ward* Ent. Mon. Mag. 8, p. 60.  
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*punctellata* Acraea *Eltr.* Trans. Ent. Soc. Lond. 1912, p. 131. \*  
  
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*rabbaiae* Acraea *Ward* Ent. Mon. Mag. 10, p. 152.  
*rabuma* Plan. *Suff.* Iris 17, p. 38.  
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*radiata* Acraea *Auriv.* Archiv f. Zool. 2: 12, p. 4.  
*radiata* Acraea *Guen.* Vinson. Voy. Madag. Annexe F, p. 35, note 8.  
*rahira* Acraea *Bsd.* Faune Madag., p. 33. \*  
  
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*regalis* Acraea *Oberth.* Etudes d'Ent. 17, p. 20. \*  
*reversa* Acraea *Eltr.* Trans. Ent. Soc. Lond. 1912, p. 296.  
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*rupicola* Acraea *A. Schultze* Ent. Rundschau 29, p. 92.  
  
*safie* Acraea *Fldr.* Reise Novara Lep., p. 370.  
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*semipunctella* Acraea *Strand* Int. Ent. Ztschr. 4, p. 226.  
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*sepia* Acraea *Eltr.* Trans. Ent. Soc. Lond. 1912, p. 272.  
*servona* Acraea *God.* Enc. Méthod. Ins. 9, p. 239.  
*sganziini* Acraea *Bsd.* Faune Madag., p. 34. \*  
*siabona* Acraea *Suff.* Iris 17, p. 32.  
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*subserena* Acraea *Smith* Nov. Zool. 7, p. 544.  
*subsquamia* Acraea *Thurau* Berl. Ent. Ztschr. 48, p. 135.  
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*sulphureseus* Acraea *Auriv.* Seitz, Macrol. p. 13, p. 254.  
*supponina* Acraea *Stgr.* Iris 9, p. 204.  
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- ufipana* Acraea *Strand* Mitt. Zool. Mus. Berl. 5, p. 279.  
*umbra* Plan. *Drury* Ill. Exot. Ins. 3, p. 23. \*  
*umbrata* Acraea *Suff.* Iris 17, p. 30.  
*umbrata* Acraea *Wichgr.* Berl. Ent. Ztschr. 53, p. 242. \*  
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*unimaculata* Acraea *Smith* Nov. Zool. 5, p. 350.  
*unipunctella* Acraea *Strand* Int. Ent. Ztschr. 1, p. 226.  
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*usaramensis* Acraea *Strand* Mitt. Zool. Berl. Mus. 5, p. 282.  
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*uvui* Acraea *Smith* Ann. Mag. Nat. Hist. (6) 5, p. 168.  
  
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*venturina* Acraea *Thurau* Berl. Ent. Ztschr. 48, p. 303.  
  
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*zetes* Acraea *L.* Syst. Nat. Ed. 10, p. 487.  
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## 7. Family: Erycinidae.

According to what has been said in Vol. I, p. 251, we have, in order to avoid inconsistencies with the former part of the work, adhered to the mode of division in Vol. I, although according to the author's view the Libytheids are entitled to be considered a separate family and the name of *Erycinidae* has to give way to that of *Lemoniidae*. In joining both groups into one family, the older name of „Libytheidae“ would, strictly speaking, have to be considered as common to both. As to the group in other faunae, comp. Vol. V, p. 617—22, and Vol. IX, p. 767.

### A. Subfamily: Libytheini.

The Libytheini are the smallest family of the day-butterflies and comprise only one single genus which however, is represented in all parts of the world.

In common with the Danaids, Satyrids, Nymphalids and Acraeids, they have the stunted and unarmed forelegs of the ♂, but they deviate by fully developed forelegs of the ♀. They are somewhat shorter than the middle and hind legs, but they have normally shaped feet with two terminal claws. From the Lemoniids, which have similarly shaped forelegs, the Libytheids differ by the straightly porrect, very long palpi. They are several times as long as the head and, apart from the rest, suffice to distinguish a form belonging hereto from nearly all the other day-butterflies. Egg elliptical, bottle-shaped, twice as long as broad, ribbed with longitudinal stripes. Larvae slender, unarmed, finely haired, almost cylindrical, with a small, round head. Pupa short, like the Nymphalid pupae freely suspended on the anal end.

### 1. Genus: *Libythea* F.

The margin of the forewing is angularly extended at the end of vein 5 and behind it more or less deeply incised. The vein 6 rises from the same place as the footstalk of veins 7 to 9; vein 7 terminates into the margin; veins 10 and 11 rise separately from the costal margin of the cell. The veins 3 and 4 of the hindwing from the same place (posterior angle of the discocellular); the precostal vein is distally turned round and rises from the very place where the vein 8 leaves the discocellular.

The Ethiopian species belong to a special subgenus, *Dichora* Scudd., distinguished by the following marks:

Antennae with a distinctly defined slender club. Palpi shorter than half the antennae. Hindwing with a uniformly curved (not lobated) costal margin and a short tail at the end of vein 2; the margin undulate.

The light markings above are almost the same in all the Ethiopian species and consist of a longitudinal streak on the forewing and a spot in the discocellular and of 5 or 6 discal spots in 1 b, 2 to 6 and on the hindwing of 6 discal spots in 2—7, of which those of the areas 2 to 5 are arranged in a straight transverse line.

### Review of the Species.

- I. The forewing with a distinct discal spot in 1 b. All the markings above, except the white discal dots in 4 to 6, grey or yellowish-grey and indistinctly defined. *L. labdaca*.
- II. The forewing without a discal spot in 1 b.
  - α. The discal dots in 4 to 6 of the forewing white; the other spots above small or indistinct, grey or yellowish-grey. *L. ancoata*.
  - β. The markings above sharply defined, yellow or reddish-yellow; the spots of the areas 4 to 6 of the forewing however, often white.
    - \*. The discocellular of the forewing with a reddish-yellow longitudinal streak, which reaches the apex of the cell or is there accompanied by a spot. The spots in 4 to 6 of the forewing white or whitish. *L. laius*.
    - \*\*. The discocellular of the forewing without a longitudinal streak, only with a transverse streak or spot at the apex; the spots of the areas 4 to 6 yellowish. *L. cinyras*.

*L. labdaca* Ww. (61 a) is recognizable by the grey markings above; the longitudinal streak in the discocellular of the forewing is often little distinct; on the forewing beneath the spots are more distinctly prominent, and the apex is covered with a violetish grey as far as the spots in 4 to 6; the hindwing beneath is usually violetish-grey, watered with brown and whitish, with the spots above distinctly prominent and white; the posterior longitudinal half of the cell and the basal part of the areas 1 e and 2 are usually darker than the other area; sometimes the hindwings are beneath almost monotonously brownish-grey without any light spots. It occurs in the whole of West Africa from Sierra Leone to Congo and Uganda and is said also to have been observed in Brit. East Africa near Kikuyu.

*ancoata*.

**L. ancoata** *Smith* is very much like the preceding species and deviates only by the spot in the area 1 b of the forewing being absent and by the middle spots on the forewings above being smaller, more indistinct and somewhat more yellowish; the hindwings are above almost unicolorous; beneath as in *labdaca*. Madagascar, on the north western coast.

*laius*.

**L. laius** is scarcely more than the southern and eastern representative of *labdaca* and deviates only by the yellow or reddish-yellow colour of the spots above and the absence of the spot in 1 b on the forewing.

*tsiandava*.

— **laius** *Trim.* (61 a). The longitudinal streak in the discocellular of the forewing is narrow and usually separated from the spot in the apex of the cell; the other spots are small and the discal spots in 2 and 3 of the forewing smaller than their distance from the margin. Angola to Natal and German East Africa. — **tsiandava** *Smith* has a longitudinal streak being coherent as far as the apex, in the discocellular of the forewing and much larger yellow spots; the discal spots in 2 and 3 of the forewing are more than twice as long as the dark marginal parts of their areas. North West coast of Madagascar. — This species belongs to those African day-butterflies that sometimes increase to great numbers and make great peregrinations. Professor VOSSELER makes the following statement about such a migration near Amani in German East Africa: „On May 11th 1904, in the morning at about 8 o'clock, single specimens of this species were restlessly flying between the office-buildings of the biological-agricultural Institute of Amani. The mode of flying and their other behaviour immediately showed them not to be amorous and honey seeking insects in quest of blossoms, but to be induced by some instinct and making for a particular goal. From 9 a. m. their numbers increased more and more. They proceeded from the brushwood of the virgin forest in the hollow of a ravine-like dell beginning directly at Amani, about 300 m south of the edifices, followed the bottom of the valley in a fluttering manner to the height, flew beyond it and vanished in the bushes of the valley of the Dodwe brook. The whole swarm passed between the laboratory and the office. They did not stop at blossoms, but a few of them alighted for a short rest on the masonry of the houses or on the ground, but were uncommonly shy and flighty. The direction of the flight was almost precisely from south to north and was steadily persevered in, even though the animals were diverted by the net. As if hunted down by some foes, the butterflies dashed out of the bushes, hurrying in hot haste along the path selected, continuously gliding sharply above the ground in an irregular zigzag flight, for which reason they were difficult to catch; very rarely some of the creatures rose 1—3 m high into the air only to sink swiftly down again. Towards noon the augmentation gradually decreased. On the day following there appeared yet a few stragglers. During the whole time of this strange occurrence there blew a gentle north-west wind in an oblique direction of the flight of the butterflies. How many thousands were migrating during the time of observation cannot even be approximately computed, for the animals, unlike other butterflies, did not fly high in the air in swarms, but were always threading their way between the plants of the experimental grounds, and owing to their dark tints contrasted but little from the soil.

*cinyras*.

**L. cinyras** *Trim.* (61 a) deviates from the other species by the absence of longitudinal streak in the discocellular of the forewing, and by the subapical spots of the forewing being yellow instead of white and touching each other, thus forming a narrow subapical band; the spots of the hindwings are large and reddish-yellow. It formerly occurred in Mauritius, but now it seems to be quite extinct; only one single specimen of it is still preserved.

#### B. Subfamily: **Lemoniinae**.

This division forms an intermediary between the Nymphalids and Lycaenids, the forelegs of the ♂♂ being stunted like in the Nymphalids, whilst those of the ♀♀ are fully developed like in the Lycaenids. From the Libytheids they deviate by the palpi being always short and bent up.

The *Lemoniinae* almost exclusively belong to the tropics. In Europe only a single species occurs, the well-known *Nemeobius lucina*, and in the nearctic region they chiefly occur only in the southernmost districts. Also in Africa and South Asia the Lemoniids are only represented by comparatively few forms. South America, however, has numerous genera and species. In the Ethiopian region only one of the subfamilies is represented.

The hindwings of the African species are without the chitinized incrassation at the base of the costal margin, which is peculiar of most of the American genera. The veins 6 and 7 of the hindwing are petioled. In the African species the forewings have 12 veins, of which 7, 8 and 9 are petioled, whilst 10 and 11 rise separately from the costal margin of the discocellular. In dealing with the Lemoniids they were therefore separated as a special family, as the **Subfamily Nemeobiinae**. The stages of development of the Ethiopian species are unknown.

#### Review of the Genera.

- A. Hindwing at vein 1 b with an angularly prominent anal angle and tailed at veins 2 and 3. Footstalk of veins 6 and 7 of the hindwing very long, much longer than vein 6. Vein 8 of the hindwing is at the rise of the precostal vein but little distant from the discocellular. Eyes hairy. 1. *Saribia*.



- B. Hindwing with a round anal angle and angled or tailed only at vein 4. The footstalk of veins 6 and 7 of the hindwing is always shorter than vein 6 and rarely as long as vein 7. Vein 8 at the rise of the precostal vein far away from the discocellular. 2. *Abisara*.

### 1. Genus: **Saribia** Btlr.

Forewing with a curved costal margin, an almost straight border and obtuse apex. Hindwing somewhat extended and easily recognizable by the two small tails. Only one species.

**S. tepahi** Bsd. (61 a). Forewing above brown with two little distinct, light grey, postmedian transverse lines, beneath reddish-brown, two transverse streaks in the cell and two postmedian transverse lines whitish; an antemarginal black spot encircled by white in 6, and an interrupted, fine transverse line. Hindwing above brown with 5 large marginal spots proximally bordered by yellow bows, of which those in 1 c, 3, 4 and 5 are blackish and that in 2 reddish-brown, beneath reddish-brown with the same marginal spots as above and besides with 3 white spots in the cell and a white discal line broken angularly in the areas 2 and 3. Madagascar, in the forests.

### 2. Genus: **Abisara** Fldr.

This genus which is sufficiently characterized by the marks stated in the review occurs also in South Asia. In the Ethiopian species the forewing usually has an eye-spot in the area 6 and the hindwing two coherent eye-spots in 4 and 5, close at the margin. Comp. Vol. I, p. 254, and Vol. IX, p. 779.

The species may, as is shown in the review, be divided into two groups deviating by their markings and shape of the wings.

#### Review of the Species.

- I. Wings above brown, with a conjoint, broad, white transverse band. The eye-spots of the areas 4 and 5 of the hindwing also above well developed, with yellow rings. Hindwing between the veins 3 and 4 with a small tail of about 5 mm length, being white at the tip. Eyes bare. Sexes similarly coloured and marked.
  - A. The white transverse band does not quite reach the costal margin of the forewing, vein 12 at most, and on the hindwing it does not reach the border of area 6.
    - α. Basal part of both wings above dark brown and distinctly defined towards the white transverse band. The white transverse band of about 5 mm width at the proximal margin and costal margin of the hindwing, posteriorly sharply tapering off in a triangular shape. Forewing with an eye-spot in area 6. *A. gerontes*.
    - β. Basal part of both wings above blackish-grey, indistinctly defined towards the white transverse band particularly on the hindwing. The white transverse band very broad and distally rounded off, at the proximal margin of the forewing of a width of about 8 mm. Forewing without an eye-spot. *A. delicata*.
  - B. The white transverse band reaches the costal margin of the forewing, and on the hindwing the margin in area 6.
    - α. Forewing above without a white subapical band. *A. dewitzi*.
    - β. Forewing on both sides with a narrow, white subapical band extending at least from vein 8 to vein 4, sometimes, however, to the posterior angle. *A. rogersi*.
- II. Wings above lighter or darker brown without a conjoint, broad, white transverse band. Hindwing at vein 4 only sharply angled or lobated. Both wings beneath with a white discal and a white submarginal line: the latter sometimes indistinct on the forewing. Sexes differently coloured and marked.
  - A. The middle discocellular (= the transverse vein between the veins 5 and 6) of the hindwing shorter than the costal margin of the discocellular. Eyes bare.
    - α. Forewing on both sides with a yellow-ringed eye-spot in the area 6.
      - \*. ♂ unknown to me. — ♀. Forewing above with two broad white transverse bands, one of which extends from the middle of the costal margin to vein 3, the other before the apex between veins 3 and 7. *A. tantalus*.
      - \*\* . ♂. Wings above unicolorously blackish-brown; hindwings with a violet lustre; both without any mealy spots, but the hindwing with a hair-pencil in the discocellular. — ♀ unknown to me. *A. intermedia*.
    - β. Forewing above without a spot in the area 6 or only with a black, not light-ringed spot. — ♂. Forewing above unicolorously dark violettish-brown with a jet-black velvety spot before the apex in the areas 4 to 6. Hindwing above without any eye-spots, but with a round, bright blue spot between veins 3 and 5, and with a black mealy spot (covered by the forewing) before the discocellular in the areas 5 and 7 to 9. — ♀. Hindwing above unicolorous with eye-spots in 4 and 5. *A. rutherfordi*.
  - B. The middle discocellular of the hindwing longer than the costal margin of the discocellular. Eyes finely haired. Both wings above with the usual eye-spots. Forewing of the ♂ without a velvety spot. *A. talantus*.

- gerontes*. **A. gerontes** *F.* To what has been said in the review, we may only add that the forewing above is somewhat lighter before the apex, whilst beneath it has a whitish subapical band. Both wings are beneath at the base whitish and then dark brown as far as the white transverse band; the areas 1 e to 3 of the hindwing are yellow at the margin with silvery transverse streaks bordered with black. Sierra Leone to Congo and Uganda.
- delicata*. **A. delicata** *Lathy.* Both wings above at the base grey, then with a very broad white transverse band indistinctly defined proximad; apical part of the forewing blackish-brown, but without an eye-spot, a light submarginal line being indicated, beneath with a white subapical band reaching the posterior angle. Nyassa District as far as British East Africa.
- dewitzi*. **A. dewitzi** *Auriv.* deviates from the following species only by the entire absence of the white subapical band of the forewing above, and is perhaps only a form of it. Southern Congo District.
- rogersi*. **A. rogersi** *Druce* (61 a). Forewing on both sides with a white subapical band reaching vein 4 in the ♂, the posterior angle in the ♀; the joint median band is sharply defined, of a moderate width, and on the hindwing posteriorly obliquely cut off and surrounding the eye-spots. Forewing without a black dot in area 6. Congo District, Angola and Ruanda. — ab. **geryon** *Stgr.* deviates only by the forewing showing a black dot before the apex in the area 6. Congo District.
- tantalus*. **A. tantalus** *Hew.* (61 a). Only the ♀ is known. Wings above dark brown with distinct, yellow-ringed eye-spots; forewing with two postmedian whitish spots, one of which extends from the middle of the costal margin, in an oblique direction towards the posterior angle, to vein 3, whilst the other is triangular and situate between the former spot and the eye-spot. Hindwing between the proximal margin and vein 4 with two light antemarginal lines. Gold Coast to Angola.
- intermedia*. **A. intermedia** *Auriv.* (61 a). ♂. We may simply add to what has been said in the review, that both wings show beneath two light transverse lines. It may be the ♂ of *tantalus*. Cameroon.
- rutherfordi*. **A. rutherfordi**. Wings beneath brown with two light transverse lines about 4 mm distant from each other which are in an oblique direction towards the posterior angle on the forewing, undulate and parallel to the marking on the hindwing. — In the chief form **rutherfordi** *Hew.* (61 a) the velvety spot of the forewing in the ♂ is large, triangular, about 5 mm long, and the ♀ has a round blue spot at the proximal margin of the forewing in 1 a and 1 b. Old Calabar and Cameroon. — **herwigi** *Dew.* differs by the ♂ velvety spot being small and round, and by the entire absence of the blue spot on the ♀ forewing. Southern Congo District.
- talantus*. **A. talantus** *Auriv.* (61 a). ♂. Forewing above with two blue transverse bands, the proximal one of which reaches the proximal margin and is very broad there, whilst the distal one extends about between the veins 4 and 8. Hindwing above at the costal margin broadly blue, and with two blue antemarginal lines in 2 and 3. Wings beneath brown; forewing with two white transverse bands, hindwing with a white median band and a large white basal spot. — ♀. Both wings above and beneath with a brown ground-colour; forewing above with three light transverse bands, the innermost of which (above the middle) is bluish, the others being whitish; hindwing at the costal margin not or only little blue, and in the areas 1 b to 3 with two whitish antemarginal lines; wings beneath almost like in the ♂, the forewing, however, with three white transverse bands, and the hindwing without a light basal spot. Old Calabar and Cameroon.

## Alphabetical List

with reference to the original descriptions of the forms of the African Libytheids and Lemoniids.

\* signifies that the form is also figured at the place cited. ‡

*anacoata* Lib. *Smith* Ann. Mag. Nat. Hist. (6) 7. p. 126.  
*cinyras* Lib. *Trim.* Trans. Ent. Soc. Lond. (3) 5. p. 337.  
*delicata* Abis. *Lathy* Trans. Ent. Soc. Lond. 1901. p. 28. \*  
*dewitzi* Abis. *Auriv.* Rhop. Aethiop., p. 250.  
*gerontes* Abis. *F.* Spec. Ins. 2. p. 117.  
*geryon* Abis. *Stgr.* Exot. Schmett. 1. p. 239. \*  
*herwigi* Abis. *Dew.* Deutsch. Ent. Ztschr. 30. p. 429. \*  
*intermedia* Abis. *Auriv.* Ent. Nachr. 21. p. 381.

*labdaca* Lib. *Ww.* Gen. Diurn. Lep., p. 413. note.  
*lailus* Lib. *Trim.* Trans. Ent. Soc. Lond. 1879. p. 337.  
*rogersi* Abis. *Druce* Ent. Mon. Mag. 15. p. 101.  
*rutherfordi* Abis. *Hew.* Ent. Mon. Mag. 11. p. 56.  
*talantus* Abis. *Auriv.* Ent. Tidskr. 12. p. 217.  
*tantalus* Abis. *Hew.* Exot. Butt. Sospita, pl. 1. \*  
*tepahi* Saribia *Bsd.* Faune Madag., p. 37.  
*tsiandava* Lib. *Smith* Ann. Mag. Nat. Hist. (6) 8. p. 81.



## 8. Family: *Lycaenidae*.

The *Lycaenidae* is the most extensive of the Ethiopian butterfly families and embraces more than 600 species. They are small or at most medium-sized butterflies and only differ from the Lemoniids in having the male forelegs better developed.

Thus the most important character of the Lycaenids is that almost without exception the forelegs of the ♂♂ are not aborted but have an unjointed tarsus, terminating in a simple hook. Only in very few forms is the tarsus jointed and, as in the ♀♀, armed at the end with two claws. With regard to the neurulation it is worthy of note that veins 10 and 11 of the forewing nearly always arise free or stalked together from the anterior margin of the cell and that the precostal vein of the hindwing is usually absent. Veins 7, 8 and 9 of the forewing, if all present, always arise on a common stalk from the apex of the cell, vein 7 runs into the distal margin, vein 8 into the apex or the costal margin and vein 9 into the costal margin. When only two of these veins are present they run into the costal margin and hence we are justified in assuming that in this case vein 7 is wanting. Occasionally vein 9 is also absent and then vein 8 is quite simple and runs into the apex or the costal margin quite near the apex.

As ♂ characters there are often mealy spots or hair-pencils. The ♂♂ also frequently differ from the ♀♀ in colour and markings.

The larvae, as far as they are known, differ quite considerably from the rest of the butterfly larvae. They are short and thick, strongly convex with the ventral surface flat, thus becoming woodlouse-shaped. The head is small and can be completely retracted into the first segment of the body. It is known of many that they are sought for and protected by ants on account of a sweet secretion or pupate in ants' nests. Others are remarkable for living not on leaves but on coccids.

The pupae are often likewise short and rounded; they are either attached at the anal end only or usually also fastened by a silken thread round the body.

The eggs, so far as they are yet known, are more or less flattened, turban- or disc-shaped, and have a very strongly developed ribbing, which is formed of a network of connected ridges. In the angles where the ridges meet knobs are sometimes developed. The eggs have consequently an elegant and beautiful sculpturing.

We divide the Ethiopian Lycaenids into two subfamilies, which may be distinguished by the following synopsis.

### Synopsis of the Subfamilies.

- A. Forewing nearly always with 12 veins, of which veins 7 and 9 arise from vein 8 behind the apex of the cell. Rarely (as in *Eresina* and *Iridana*) vein 7 is wanting, so that only 11 veins are present; in this case either vein 10 arises from the stalk of 8 and 9 or vein 8 is semicircularly curved before its end. Eyes naked. Hindwing always rounded without tail-appendages, anal lobes or hair-tufts.

#### *Lipteninae*.

- B. Forewing nearly always with only 10 or 11 veins, vein 7 and sometimes also vein 9 being absent. Vein 10 always free from the anterior margin of the cell. Rarely (in *Aphnaeus*, *Phasis*, *Erikssonia* and the ♂♂ of some *Jolaus* species) 12 veins are present, in which case, however, the hindwing is tailed, lobed or angled.

#### *Lycaenini*.

### 1. Subfamily: *Lipteninae*.

The characters of this very interesting subfamily have already been given in the synopsis. The early stages are unfortunately still almost entirely unknown. The only larvae and pupae known are those of *Durbania* and *Hewitsonia*; the reader is referred to the descriptions under these genera. It is very probable that the life-history of the larvae is peculiar and that many of them are the guests of ants, as has already been proved with regard to the larva of *Euliphyra*.

The sexes are usually similar, but sometimes very differently coloured and marked. The extremity of the abdomen in the ♂ often shows a characteristic swelling and the ♂ genitalia are asymmetrically formed.

The *Lipteninae* occur especially in the West African subregion and are entirely wanting in the Madagascar subregion. All the genera are peculiar to Africa.

They are in general delicately built forms, often gaily coloured, and occasionally show distinct mimetic association with other butterflies.

In some few genera there is a distinct precostal vein on the hindwing. As this vein is otherwise entirely absent in the Lycaenids its presence seems to me to be of such importance as to necessitate our dividing the *Lipteninae* into two groups.

### 1. Group: *Pentilini*.

Hindwing with a distinct precostal vein. The genera *Cooksonia* and *Sheffieldia* probably belong to this group. As, however, I have not been able to examine them and their author says nothing about the precostal vein, the position of these two genera must for the present remain uncertain. Veins 3 and 4 of the hindwing are always separate.

### Synopsis of the Genera.

- I. Vein 6 of the forewing arises from the same point as the stalk of 7—9 or from this stalk and is separated from vein 5 by a vertical middle discocellular. Veins 6 and 7 of the hindwing stalked, from the same point or only very slightly separated. Palpus short with knobbed terminal joint.
  - a. Frons and palpus with bristly hairs. 1. *Alaena*.
  - b. Frons and palpus with appressed scales. 2. *Telipna*.
- II. Vein 6 of the forewing is separated from the stalk of veins 7—9 by the well developed, very obliquely placed upper transverse vein (upper discocellular) and hence apparently arises from the apex of the cell. Veins 6 and 7 of the hindwing widely separated.
  - a. Antenna rather long, almost reaching the apex of the cell of the forewing, which does not extend beyond the middle of the wing.
    - \*. Veins 5 and 6 of the forewing separate at their origin.
      1. Palpus moderate, with short terminal joint. Costal margin of the hindwing only feebly curved. 3. *Cooksonia*.
      2. Palpus long, extending far beyond the frons, with the terminal joint almost cylindrical. Costal margin of the hindwing strongly lobed near the base or before the middle. 4. *Durbania*.
    - \*\* . Veins 5 and 6 of the forewing from the same point. Costal margin of the hindwing nearly straight. 5. *Sheffieldia*.
  - b. Antenna much shorter than the cell of the forewing, which is very long and extends far beyond the middle of the wing. 6. *Pentila*.

### 1. Genus: **Alaena** *Bdv.*

Small or rarely medium-sized Lipteninids with yellow or white ground-colour and black markings or blackish with white spots. — Antenna with sharply defined, flattened club. Wings rounded; hindwing elongate and often very narrow. The cells are short, not reaching the middle of the wings; veins 7—9 of the forewing are long-stalked and veins 10 and 11 quite free. Vein 5 arises on both wings somewhat nearer to 6 than to 4. — All the species belong to South and East Africa and on the west coast only extend as far as the Congo. They have a weak and sluggish flight.

### Synopsis of the Species.

- I. Wings above yellow or whitish with black-edged veins and black marginal bands, beneath without black transverse markings between the veins. *A. amazoula*.



II. The under surface of the wings has at least at the distal margin black transverse markings which are connected by the veins or is black with light spots. .

A. Hindwing above with light markings.

a. Forewing above with a continuous, curved, light median band.

\*. Hindwing above with a curved, light median band, running from the middle of the inner margin to the middle of the costal margin.

§. The band of the forewing reaches the hindmargin or at least vein 1. Hindwing beneath not reticulated in the middle.

1. The band of the forewing is posteriorly widened and covers the base of cellules 2 and 3.

*A. interposita.*

2. The band of the forewing is posteriorly not or little widened and does not cover the base of cellules 2 and 3.

a. The median band of the hindwing does not reach the costal margin

*A. nyassae.*

b. The median band of the hindwing reaches the costal margin. *A. rollei.*

§§. The transverse band on the upperside of the forewing has a uniform breadth of only 1—1.5 mm. Hindwing beneath reticulated almost throughout.

1. Both wings above with a row of white submarginal spots.

*A. reticulata.*

2. Wings above without light submarginal spots.

*A. caissa.*

\*\*. Hindwing above with a straight, narrow transverse band, composed of 5 small spots in cellules 1 c—5 and directed towards the apex.

*A. johanna.*

b. Forewing above with a white hindmarginal spot in 1 a and 1 b and a straight white subapical band between the costal margin and vein 3.

*A. picata.*

B. Hindwing above unicolorous black without markings.

*A. oberthueri.*

**A. amazoula** *Bdv.* (61 c). Wings red-yellow to ochre-yellow with all the veins broadly edged with black and above with blackish marginal band, widened at the apex of the forewing; under surface, particularly of the hindwing, with lighter ground-colour and without dark marginal band. Cape to German South-West Africa and Nyassaland. — **congoana** *form. nov.* differs in having the ground-colour orange-yellow and the veins only very finely darkened. On the Lower Congo and in Angola. *amazoula.*

**A. interposita** *Btlr.* Wings above black-grey with a common white median band, which on the forewing covers the base of cellules 2 and 3; two white spots in the cell of the forewing; on the under surface the veins in the distal part are connected by two black lunulate lines, which enclose two rows of light spots; basal area of the hindwing beneath also with large white spots. German East Africa at Tabora and on the Victoria Nyanza. — **hauttecoeuri** *Oberth.* (= *aurantiaca* *Btlr.*) (62 i) only differs in having the median band of both wings orange-yellow and the marginal band narrower and above deep black. At Tabora and on Lake Tanganyika. *interposita.*

**A. nyassae** *Hew.* (61 c). Wings above black-grey with narrow white median band, which on the forewing does not cover the base of cellules 2 and 3 and is not widened towards the hindmargin and on the hindwing does not reach the costal margin; the dark marginal band of the upper surface is about 4 mm. in breadth, hence much broader than in *interposita*; forewing above usually with two light subapical spots. On the under surface the marginal spots are often undivided and form only a macular row. Matabeleland to Nyassaland. ab. **ochracea** *Btlr.* The median band more or less yellowish. Nyassaland. *nyassae.*

**A. rollei** *Suff.* (= *mulsa* *Thieme*) is black with orange-yellow transverse band, which on the hindwing reaches the costal margin; some of the light marginal spots on the under surface are rounded and in the black basal area of the hindwing there are only three large light spots. German East Africa: Usambara. — According to STRAND this is the ♂ of *A. picata* *E. Sharpe.* *rollei.*

**A. reticulata** *Btlr.* Wings above black with white spots; forewing with two white spots in the cell, a narrow, somewhat curved median band, almost broken up into spots, between the costal margin and vein 1 and a curved row of small submarginal spots; hindwing above with curved median band, almost broken up into spots, and 6 free submarginal spots. Forewing beneath in the basal half black with two white spots in the cell and some small ones at the costal margin, in the distal half with three rows of large, only narrowly separated whitish yellow spots; hindwing beneath with numerous whitish yellow spots, only separated by the black veins and fine black transverse lines, which form an almost reticulate pattern. Nyassaland. *reticulata.*

*caissa*. **A. caissa** Rbl. & Rog. (63 b) only differs from *reticulata* in the absence of the white submarginal spots on the upper surface. German East Africa near the Victoria Nyanza.

*johanna*. **A. johanna** E. Sharpe (63 a) is a small species allied to *reticulata*. Wings above black-grey with white spots; forewing with two spots in the cell and a narrow median band broken up into spots, consisting of three somewhat larger spots, placed in a line, in cellules 1b—3 and four dots in cellules 4—6 and 9; hindwing only with a narrow, straight transverse band, which is placed beyond the middle, is directed towards the apex and reaches neither the inner margin nor the apex. Forewing beneath blackish with whitish spots almost as in *reticulata*. Under surface of the hindwing yellowish with numerous small whitish spots. British East Africa and Somaliland.

*picata*. **A. picata** E. Sharpe (61 c). Wings above black; forewing with a white subapical band from the costal margin to vein 3 and a small quadrate spot at the middle of the hindmargin; hindwing only with white median band, which forms a ventricose distad projection in the middle and is there about 4 mm. in breadth. Forewing beneath with the same white markings as above and in addition with light spots in the cell and at the costal and distal margins; hindwing beneath with undivided white median band, which is even broader than above, and in addition with white spots at the base, 3 large and one punctiform, and with very large light yellow marginal spots, of which those in 2 and 4 are divided. British East Africa. According to Rev. St. AUBYN ROGERS is in flight deceptively like a *Neptis*.

*oberthueri*. **A. oberthueri** Auriv. (62 a). Wings above black; hindwing unicolorous without markings, forewing beyond the middle with a curved transverse row of small white spots from the costal margin to vein 3 or 2. Forewing beneath to beyond the middle black with some indistinct light spots at the costal margin, in the apical part with three transverse rows of light spots; hindwing beneath black, in the basal half with 6 or 7 white spots, in the distal part with three curved transverse rows of white spots. Mpala on the west coast of Lake Tanganyika.

## 2. Genus: **Telipna** Auriv.

*Telipna* agrees almost entirely with *Alaena* in neuration and only differs in the appressed scaling of the palpus. — In the markings and shape of the wings, however, the *Telipna* species differ quite considerably from *Alaena*. The forewing is more elongate and more pointed. Both wings are black above and at the base more or less extended red or orange and occasionally also with light subapical spots on the forewing and white marginal spots on the hindwing. Most of the species are also much larger than *Alaena*.

### Synopsis of the Species.

- I. Both wings beneath orange-yellow to light yellow, at the costal and distal margins with sharply prominent black and white markings. The hindwing beneath always with broad, continuous, black, white-spotted marginal band, which is usually narrower in cellules 4 and 5 than in the other cellules. Fringes usually light-spotted. The hindwing beneath at the costal margin with 3 or 4 black transverse spots or streaks, one of which is prolonged posteriorly along the transverse vein of the cell; this is here called the median transverse streak.
  - A. Hindwing beneath at the costal margin with two distinct streaks proximally to the median transverse streak; these traverse cellules 8 and 7 and often also form a dot in the cell.
    - a. Forewing above with a continuous red or red-yellow transverse band, which extends from the costal to the hindmargin and is much widened posteriorly. Hindwing above with unspotted black marginal band.
      - \*. The transverse band on the upperside of the forewing is unicolorous yellow-red, is placed entirely outside the cell and does not cover the base of cellules 1 a and 1 b. *T. rothi*.
      - \*\* . The transverse band of the forewing is anteriorly much narrower and lighter-coloured, covers the posterior longitudinal half of the cell and reaches quite to the base of cellules 1 a and 1 b. *T. acraea*.
    - b. Forewing above with a large red hindmarginal spot and a subapical band entirely separated from it.
      - \*. The subapical band on the upperside of the forewing composed in the ♂ of 2, in the ♀ of 3 spots; the cell of the forewing entirely black or only red along its posterior side. Marginal band on the upperside of the hindwing without white spots. The fourth transverse streak at the costal margin of the hindwing beneath straight. *T. bimacula*.



- \*\* The subapical band on the upperside of the forewing white and composed in the ♂ of 3, in the ♀ of 4 spots. The cell of the forewing above in the ♀ entirely red-yellow. Marginal band on the upperside of the hindwing nearly always with 3 or 4 white spots just before the distal margin. The fourth transverse streak at the costal margin of the hindwing beneath irregular.

*T. acraeoides.*

B. Hindwing beneath at the costal margin with only one streak proximally to the median transverse streak; the streaks usually separated by white transverse spots. Cell of the forewing above entirely or almost entirely red-yellow. The red-yellow hindmarginal spot of the forewing reaches the base of cellules 1 a and 1 b.

a. Forewing above without subapical band. Marginal band on the upperside of the hindwing without white spots. The first streak at the costal margin of the hindwing beneath broadly separated from the median transverse streak.

*T. rufilla.*

b. Forewing above with white subapical band. The first streak at the costal margin of the hindwing beneath is placed near the median transverse streak.

\* Marginal band on the upperside of the hindwing without white spots. The first costal streak on the underside of the hindwing long and narrow, very obliquely placed. The cell with black longitudinal streak at the base.

*T. transversstigma.*

\*\* Marginal band on the upperside of the hindwing with white spots. The first costal transverse streak on the underside of the hindwing short. The hindwing beneath without black longitudinal streak in the cell.

1. The orange-red basal area of the forewing above almost reaches the white subapical band.

a) Forewing above with distinct white marginal spots at least in 1 b—4.

*T. erica.*

b) Forewing above without white marginal spots.

*T. nyanza.*

2. The orange-red basal area of the forewing above broadly separated from the white subapical band.

*T. sanguinea.*

II. Fringes unicolorous without light spots. Wings beneath dark without white markings.

a. Basal part of the forewing on both surfaces dull orange-yellow to the costal margin. Hindwing beneath with greyish ground-colour and some black basal dots.

*T. actinotina.*

b. Basal part of the forewing at least at the costal margin broadly black. Hindwing beneath with dark yellow ground-colour.

*T. carnuta.*

*T. rogersi.*

**T. rothi** Sm. Forewing above black with a complete red-yellow median transverse band, angled *rothi*. at vein 4, at the costal margin about 2 mm. in breadth and at the hindmargin 9 mm., leaving the cell and the base of cellules 1 a and 1 b free. Hindwing above red-yellow with black, unspotted median band of an almost uniform breadth of about 3 mm. Both wings beneath light orange-yellow with black and white markings at the costal and distal margins as in the allied forms. Nigeria, near Warri.

**T. acraea** Dbl. & Hew. (61 e) approximates to the preceding species, only differing in having the *acraea*. red-yellow transverse band on the forewing above narrower and lighter at the costal margin, much broader (about 15 mm.) at the hindmargin and reaching the base. The black marginal band of the hindwing is about 4 mm. in breadth. Gold Coast to the Cameroons. ♀-ab. **nigra** Suff. is distinguished by having the black *nigra*. marginal band on the upperside of the hindwing very broad and reaching the apex of the cell.

**T. bimaculata**. Forewing above black with a large red hindmarginal spot, which covers the base of cellules 1 a and 1 b, the posterior longitudinal half of the cell, more than half of cellule 2 and the base of cellule 3, and usually also with a small subapical band. Hindwing above red with an unspotted black marginal band about 3.5 mm. in breadth; the fringes of both wings white-spotted. Both wings beneath orange-yellow with black and white streaks and spots at the costal and distal margins as in the allied species; hindwing beneath at the costal margin with four distinct black transverse streaks, of which the third is continued on the transverse vein of the cell and the fourth is straight. — **bimacula** Plötz (61 c, d). The subapical *bimacula*. band on the upperside of the forewing is light yellow and consists in the ♂ of two spots (in 4 and 5) and in the ♀ of three (in 4—6). Cameroons. — **echo** Sm. & Kirby (61 d) only differs in the red subapical band of *echo*. the forewing. Ashanti. — **albofasciata** Auriv. is distinguished by a white subapical band. Fernando Po. — *albofasciata*. In **semirufa** Sm. & Kirby (61 d) the subapical band of the forewing above is entirely absent and the hindmarginal spot is smaller and narrower. Gold Coast to the Congo.

**T. acraeoides** Sm. & Kirby (61 d) only differs from *bimacula* in the characters given in the synopsis. *acraeoides*. Cameroons to Angola.

**T. rufilla** Sm. is similar above to *semirufa* (61 d) and like this lacks the subapical band on the upper- *rufilla*. side of the forewing, but has a larger hindmarginal spot, which covers both the greater part of the cell and the base of cellule 3. Marginal band of the hindwing above unspotted. The under surface only differs in the characters given in the synopsis. Nigeria, near Warri.



- transver-*  
*stigma.* **T. transverstigma** (sic!) *Ham. Druce* (63 a). Forewing above with large orange-red hindmarginal spot, which reaches vein 4 and covers almost the whole cell; the black apical part with broad white subapical band composed of three spots in cellules 4—6; marginal band on the upperside of the hindwing unspotted. Hindwing beneath with three long, narrow, very obliquely placed black transverse streaks at the costal margin and a black longitudinal streak in the cell. Cameroons.
- erica.* **T. erica** *Suff.* (61 e). Forewing above orange-red, at the costal margin, the apex and the distal margin black, in cellules 4—6 and 9 a white subapical band, which in cellule 6 is much broader than in the other cellules, and at the distal margin some white spots. Hindwing above orange-red with black marginal band, which encloses a white submarginal spot in each cellule from 1 c to 5. Hindwing beneath at the costal margin with short black streaks, which are separated by white spots. Cameroons.
- nyanza.* **T. nyanza** *Neave* approaches the preceding species and, like the latter, is distinguished by the great extent of the orange-red colour on the upper surface; on the forewing this reaches the white subapical band, which is formed as in *erica*, and also covers a part of the costal margin distally to the cell; white marginal spots are wanting on the forewing, but are well developed on the hindwing. Transverse streaks at the costal margin of the hindwing beneath very short and weakly developed. Uganda.
- sanguinea.* **T. sanguinea** *Plötz* (61 d). Forewing above black with large orange-red hindmarginal spot, which reaches vein 4 and completely fills up the cell, and with a subapical band, broadly separated from the hindmarginal spot, consisting of three white spots of almost uniform size in cellules 4—6. The black marginal band on the upperside of the hindwing broad, with white spots just before the distal margin. On the under surface of the hindwing there are three black transverse streaks at the costal margin, of which the first is short but the other two long, reaching vein 5. Cameroons to Angola.
- The following species differ from the preceding in the quite different under surface, which is dark and not spotted with white.
- actinotina.* **T. actinotina** *Lathy* (62 a). Forewing on both surfaces in the basal part orange-yellow as far as the costal margin and vein 4, in the apical part above black with two elongate yellow subapical spots in 5 and 6, beneath black-grey with indistinct light subapical spots in 3—6 and broad black bordering to the yellow basal part. Hindwing brown-grey beneath with some small black basal dots. Nigeria.
- T. carnuta** is a small species, measuring only about 30 mm., and has the under surface yellowish, irrorated with black and with some black discal spots; hindwing above red-yellow with black marginal band; forewing above black with or without red-yellow hindmarginal spot, which in the ♀ reaches at least vein 3.
- carnuta.* — **carnuta** *Hew.* (61 e). Marginal band on the upperside of the hindwing broad, anteriorly widened and almost reaching the apex of the cell; hindmarginal spot of the forewing in the ♂ small or absent. Gaboon to Uganda.
- parva.* — **parva** *Kirby*. Hindmarginal spot on the upperside of the forewing in the ♂ larger; marginal band of the hindwing narrower, not nearly reaching the cell. Sierra Leone to Cameroons.
- rogersi.* **T. rogersi** *Ham. Druce* is very similar to *T. carnuta* and only differs in having the hindmarginal spot of the forewing prolonged anteriorly as a transverse band as far as vein 5 or 6. British East Africa. Is probably only the East African form of *carnuta*.

### 3. Genus: **Cooksonia** *Ham. Druce.*

Antenna moderately long with flattened club. Forewing with the costal margin nearly straight, the apex almost rectangular and the distal margin curved. Distal margin of the hindwing uniformly rounded.

The only known species has an *Acraea*-like pattern.

- trimeni.* **C. trimeni** *Ham. Druce* (63 a). Wings orange-red above; the forewing at the costal margin narrowly and at the apex broadly black, with 4 or 5 elongate white spots before the apex; the broad black apical spot has its proximal boundary almost straight and is continued in cellules 2—1 a as a narrow marginal band as far as the hinder angle; a black dot in the cell and a larger one at its apex; hindwing above with black median dot and narrow black, light-spotted marginal band. Forewing beneath almost as above, but instead of the white apical spots with quadrate yellow marginal spots in 3—7. Hindwing beneath somewhat more reddish with several large black basal and discal dots and two thick undulate or angled black arcuate lines before the distal margin. Rhodesia.

### 4. Genus: **Durbania** *Trim.*

The species of this genus are confined to South Africa. They are small butterflies, characterized by the large basal lobes of the hindwing and the long pointed terminal joint of the palpus. The cell reaches at most



the middle of the wing; veins 5 and 6 and 6 and 7 are distinctly separate at their origin and the upper discocellular of the forewing is very oblique. Vein 8 is strongly curved at the base and the precostal vein arises far from the cell. The butterflies have a sluggish flight and rest on stones with which the markings and colouring of the under surface agree. — Larva elongate, cylindrical or somewhat spindle-shaped, with distinct segments, long-haired. Pupa short and thick, convex above, flat beneath; upperside of the thorax and sides and back of the abdomen with long hair-pencils.

#### Synopsis of the Species.

- A. Wings above black to black-brown and beyond the middle with a transverse row of 5 or 6 red or red-yellow spots. Under surface of the hindwing more or less irrorated with white, but without white transverse streak or band.
- a. The transverse row of spots on the upper surface is at least 2 mm. from the distal margin and orange-yellow in colour. The spots of the forewing are smaller at the costal than at the inner margin. *D. amakosa*.
- b. The transverse row of spots on the upper surface is placed close to the distal margin and is orange-red. The spots of the forewing are larger at the costal than at the inner margin. *D. limbata*.
- B. Hindwing beneath beyond the middle with a white transverse band or line sharply angled at vein 5 and dark-edged proximally. Wings above dark brown with a transverse row of 5 small ochre-yellow spots placed almost 3 mm. from the distal margin. *D. saga*.

**D. amakosa** Trim. (62 a). Wings beneath irrorated with white, the forewing less than the hindwing; *amakosa*. the orange-yellow transverse band of the upper surface is absent beneath on the hindwing, but on the forewing is broader, more continuous and margined with black. The ♀ has broader orange-yellow transverse bands on the upper surface. — Larva ash-grey with a dark dorsal line bordered by whitish spots and with rounded red lateral spots, which on the first segments are separated by white patches; head red; body clothed with longer ash-grey and shorter yellowish hairs; lives on a common grass, *Anthistiria ciliata*. Pupa light brown; dorsum and sides very hairy; thorax and basal half of the abdomen with pencils of shorter yellowish and longer white hairs; the tip of the abdomen covered by the cast off larval skin. Cape to Transvaal.

**D. limbata** Trim. differs from *D. amakosa* above in the characters given in the synopsis. Beneath the *limbata*. white scales form dark-pupilled rings and the hindwing has a strongly curved row of orange-yellow, black-ringed submarginal spots in cellules 1 a—7. Natal and Transvaal.

**D. saga** Trim. (62 a) differs from the other two species especially in the markings of the under surface. *saga*. The cell of the forewing above is more or less yellow-scaled and the forewing beneath has two transverse rows of light spots in the distal part. Cape.

#### 5. Genus: **Sheffieldia** Ham.Druce.

This genus, which is unknown to me, is described by the author as being nearly allied to *Cooksonia*, from which it differs in veins 5 and 6 of the forewing, which arise from the same point or are short-stalked; the middle discocellular vein, which is present in *Cooksonia*, is consequently entirely absent. Palpus and antenna as in *Cooksonia*. The other characters given in our generic synopsis are taken from a figure of the neuration. In this figure the precostal vein of the hindwing is wanting; it is, however, possible that this was overlooked by the artist.

**S. neavei** Ham. Druce (63 a). Forewing above black with an orange-red transverse band, which from the *neavei*. costal margin to vein 4 is only 4 mm. in breadth, but then widens rapidly, reaches the base of cellules 3—1 b and also forms a longitudinal streak at the hindmargin of the cell; forewing beneath almost as above, but in the black marginal band with whitish yellow rectangular marginal spots, which in cellules 1 b—3 are joined to the orange-red median band. Hindwing above orange-red with black marginal band 4 mm. in breadth and narrowing at the anal angle and with a rounded black spot at the apex of the cell; beneath lighter yellow with several black basal and discal dots and a black marginal band, which encloses a curved row of blue submarginal and yellow marginal spots. German East Africa.

#### 6. Genus: **Pentila** Westw.

The numerous species of this genus may be known at once by the very long cells, which extend far beyond the middle of the forewing. The antenna has a flattened, well defined club and does not reach the apex of the

cell. Palpus moderately long, with small, oval terminal joint. Vein 6 of the forewing arises near vein 5 and appears to spring from the apex of the cell, as the upper discocellular vein is very long and forms a continuation of the anterior margin of the cell. Hindwing with small, distally curved precostal vein.

The genus is represented both in West and South Africa and also in East Africa.

The species may be divided into three groups.

#### Synopsis of the Groups.

- I. Wings densely scaled, with orange-red ground-colour. Forewing above very broadly black at the apex, with white subapical band. Both wings beneath with white marginal spots. First Group.
- II. Forewing above without white subapical band. Wings beneath without white marginal spots.
  - A. Wings not semitransparent, ground-colour red-yellow to whitish. Forewing nearly always with a rounded, free black dot at the end of the cell or, if this dot is absent, beneath with large black marginal dots. Second Group.
  - B. Wings short and broad, semitransparent with white ground-colour, at the distal margin more or less blackish, but always without marginal, submarginal and discal dots. Forewing also always without free round dot on the transverse vein. Third Group.

#### First Group.

Only a single species, which approximates in colour and markings to *Cooksomia* and *Telipna*.

*hiendl-  
mayeri*.

**P. hiendlmayeri** Dew. (61 e). Both wings orange-red; apical half of the forewing as far as the hinder angle and the middle of the costal margin black with narrow white subapical band and beneath in addition with white marginal spots. Hindwing with black marginal band only 1.5 mm. in breadth, which is unspotted above, but has white spots beneath. Congo region: Mukenge and Ikelemba.

#### Second Group.

This group embraces the typical *Pentila* species, whose pattern consists of black or blackish spots, usually free but sometimes more or less confluent, on a light ground. These spots are most distinct and best separated on the under surface and, when complete, consists of: 1. Basal dots in the cells and at the base of cellules 1 b, 2, 9 and 10 of the forewing and 1 c, 2 and 7 of the hindwing; 2. A median dot at the end of the cell; 3. Discal dots in cellules 2—6 and 9 of the forewing and 1 b—7 of the hindwing; 4. Submarginal dots in cellules 1 b—6 and 8 of the forewing and 1 c—6 of the hindwing; 5. Marginal dots at the extremities of the veins. These dots are thus arranged almost exactly as in *Pardopsis punctatissima* (53 a).

#### Synopsis of the Species.

- I. Wings above with red-yellow, orange-yellow or ochre-yellow ground-colour.
  - A. Hindwing above with black or black-grey marginal band or at least with large, black, contiguous marginal spots.
    - a. Both wings beneath with rounded, free discal and submarginal dots or at least with the latter or instead with thick black streaks at the distal margin on the interneural folds.
      - \*. Wings beneath at the distal margin without black longitudinal streaks on the interneural folds.
        - §. The black marginal band on the upper surface is very broad and covers also the discal dots, which are closely approximated to the submarginal spots. In cellule 2 of the forewing the discal dot is placed much nearer to the submarginal than to the basal dot.
        0. The black tip of the forewing above is very broad, reaches the apex of the cell and entirely or almost entirely covers the base of cellules 5 and 6. Ground-colour of the upper surface red-yellow. *P. nero*.



00. The black apex of the forewing above is moderately broad, it does not cover the base of the areas 4 to 6 and is rather distantly remote from the apex of the discocellular.

*P. rotha*.

§§. The black marginal band above is less broad and, therefore, does not reach the discal dots in the areas 1 b to 3 on the forewing and 1 c to 6 on the hindwing. If the discal dots are absent above, their position beneath is easily visible, if one holds the wings against the light.

0. Discocellular of the forewing with three black dots at most.

1. Marginal band on the hindwing above broad. Ground-colour beneath pure without striae.

*P. amenaida*.

*P. multiplagata*.

2. Marginal band on the hindwing above narrow, linear. Ground-colour red, beneath speckled with grey scales.

*P. amenaidoides*.

00. Discocellular of the forewing with 5 black dots. Wings beneath at least at the margin with black striae and minute dots.

*P. mombasae*.

\*\*. Both wings beneath at the margin with thick black streaks on the internerval folds. Discocellular of the forewing without black dots. Costal margin of the forewing above narrow black.

*P. clarensis*.

*P. pauli*.

6. β. The wings beneath without discal and submarginal dots or only with small and indistinct similar dots. Above there is usually only one black dot at the end of the cell, sometimes there are also some small basal dots. Forewing above at the costal margin, at least as far as the discocellular, blackish.

\*. Both wings with a distinct black dot at the end of the discocellular.

§. The black marginal band on the forewing above does not reach the apex of the discocellular and does not cover the base of the areas 5 and 6.

*P. petreia*.

§§. The black marginal band on the forewing above reaches the apex of the discocellular and covers the base of the areas 5 and 6.

*P. inconspicua*.

\*\*. Both wings without a black discal dot.

*P. parapetreia*.

B. The hindwing above without a dark marginal band or marginal line and usually also without marginal dots, but sometimes with small marginal streaks extended on the fringes as black spots. Forewing above at the costal margin not or only narrowly darkened.

\*. Both wings beneath without submarginal dots; the discal dots are also absent, or they are small or incomplete. On the upper surface the wings have only one discal dot and sometimes also 1 to 5 basal dots.

*P. paucipunctata*.

\*\*. The wings beneath with distinct discal and submarginal dots.

1. Both wings above without discal dots; the hindwings also without submarginal dots.

*P. tropicalis*.

2. Both wings above with discal dots.

α. The apex of the forewing above at least 3 or 4 mm broad, black. Both wings above with submarginal dots which are more or less united with the border on the forewing.

*P. lasti*.

β. The apex of the forewing above in the ♂ scarcely or very little blackened. Both wings above without submarginal dots. Ground-colour bright orange-yellow.

*P. occidentarium*.

II. Wings of a light sulphur-yellow or white ground-colour, and only close at the base somewhat ochreous-yellow.

A. Both wings below and at least also the hindwings also above with distinct, separate, dark marginal dots at the ends of the veins.

α. The wings on both sides with discal dots, beneath also with submarginal dots.

- \*. All the dots small and on the under surface brownish. The dark marginal band on the forewing above reaches the vein 2 at most. *P. laura*.
- \*\*. The dots on the wings large and distinct, black or blackish-grey. The dark marginal band on the forewing above reaches vein 1 at least. *P. heuritsoni*.
- β. Wings on both sides without discal dots.
  - \*. At least the forewing with a distinct black discal dot. Forewing above with a broad dark apical band reaching at least vein 4.
  - §. Hindwing on both sides with large submarginal dots which are above united with the marginal dots to a marginal band. The dark marginal band on the forewing above is very broad and reaches the anal angle or vein 1.
    - 1. Discal and basal dots very large. Ground-colour of the hindwings beneath pure without striae. *P. pardalena*.
    - 2. Discal and basal dots small or moderately large. Ground-colour of the hindwings beneath with black striae. *P. christina*.
  - §§. Hindwings at least above without submarginal dots.
    - †. Marginal spots particularly beneath proximally extended like streaks. No submarginal dots. *P. auga*.
    - ††. Marginal spots not extended like streaks.
      - 0. Hindwings darker than the forewings, pale ochreous yellow. *P. aspasia*.
      - 00. Hindwings not darker than the forewings.
        - A. Forewings at least with two basal dots (in 2 and the discocellular<sup>cal cell</sup>).
          - 1. Forewing with 6 to 10 (one each in 1 b to 3, 9 to 11, and 2 to 5 in the discocellular), hindwing with 2 to 6 (one each in 1 c, 2, 7, and 0 to 3 in the discocellular) basal dots, and beneath sometimes also with submarginal dots.
            - P. abraxas*.
            - P. telesippe*.
            - P. cloetensi*.
          - 2. Forewing only with 2 or 3 (in 2, 10 and the discocellular), hindwing with 1 or 2 basal dots (in 2 and 7).
            - a. Forewing light yellow with a large, white anal-marginal spot; hindwing white. Apical spot of the forewing only 1 to 2 mm broad. *P. phidia*.
            - b. Both wings of a white ground-colour. *P. tripunctata*, *P. elpinice*.
        - A A. Wings without basal dots or rarely with one in the discocellular of the forewing and in area 7 of the hindwing. *P. torrida*.
  - \*\*. Both wings above and beneath without a discal dot and without all the other dots except the marginal dots. *P. tachyroides*.
  - B. Both wings without black marginal dots and without discal and submarginal dots, but with a black discal dot.
    - α. Forewing above with a black apical spot of 4 or 5 mm width, ending broad at vein 4 or between 3 and 4. Both wings without basal dots. *P. picena*.
    - β. Apex of forewing above not at all or only between the veins 6 and 9 narrowly coloured black.
      - \*. Wings at least with one basal dot and forewing above with a black apical spot.
        - 1. Forewing with two basal dots (in 2 and in the cell); hindwing with two basal dots (in 2 and 7). Hindwing beneath striated yellowish and black. *P. bitje*.
        - 2. Wings on both sides purely white; each wing only with one basal dot (in the discocellular of the forewing and area 7 of the hindwing). *P. alba*.
      - \*\*. Both wings without basal dots and without all the other black markings except the discal dots. *P. glagoessa*.



**P. nero** Sm. & Ky. (? = *umbra* Holl.) (61 e). Wings of an orange-yellow or reddish-yellow ground-colour and above with a very broad, dark marginal band reaching the discal dots and on the forewing also the apex of the discocellular; on the forewing it is continued at the costal margin as far as the base and reaches there the costal margin of the discocellular. Beneath all the dots are completely present. Kulu River and Congo District. *nero*.

**P. rotha** Hew. (= *marianna* Suff.) (61 e) deviates from *nero* only by the black apical band on the forewing above not reaching the apex of the discocellular, so that the areas 4 to 6 are yellow in the basal part Cameroon to Gabun. *rotha*.

**P. amenaida** Hew. (61 f). Wings orange-yellow or rarely reddish-yellow, above with a black marginal band which is narrow and does not reach the discal dots of the hindwings and of the areas 2 and 3 of the forewing, and does not reach the discocellular at the costal margin of the forewing; the discal dots are sometimes absent above, (= ab. *amenaidana* Strand), and only show through from beneath; discocellular of the forewing above without black dots or with three such dots at most; under surface usually fully developed with all the dots. Congo District and Angola. — **nyassana** Auriv. deviates by the absence of all or nearly all the basal dots above and by the wings being greenish-yellow at the margin. Nyassa District. *amenaida*, *amenaidana*, *nyassana*.

**P. multiplagata** Baker is unknown to me, but according to the description it seems hardly to differ from *amenaida*; at least the description does not mention any marks that could not also be applied. The description runs: „Thorax black; abdomen light ochreous-yellow; both wings ochreous-yellow with somewhat lobated, very broad black marginal bands; forewing with the costal margin narrow black with two black dots above the cell, a larger one at the end of the discocellular and 3 postmedian ones (= discal dots) in a bow from vein 1 to 3. Hindwing with a dot at the cell-end and a postmedian row of 7 dots parallel to the black marginal band, the three lower ones are nearer at the base than the four upper ones. Under surface: forewing ochreous-yellow, at the apex yellowish with three dots across the discocellular, one at its apex, one between the veins 1 and 2 near the angle, a postmedian row of 8 dots, beginning at and above the third costal dot, and a subterminal row of 6 dots, the three foremost of which form broad spots, the three hindmost forming large dots. Hindwing lighter than the forewing with a curved row of 5 basal dots, the one at the costal margin and in the cell being very small, the three others in 1 a to 2 large, a postmedian row of 9 large dots and a subterminal row of 7 large dots. Expanse of 40 mm.“ Congo District: Makala. *multiplagata*.

**P. amenaidoides** Holl. very much approaches *P. amenaida*, and only deviates by the black marginal band above on the hindwing and in the areas 1 a to 2 on the forewing being very narrow, linear. The ground-colour is reddish and on the under surface speckled with grey scales. Gabun. *amenaidoides*.

**P. mombasae** Sm. & Ky. (61 f) is probably the eastern race of *amenaida* and deviates only by the discocellular of the forewing showing 5 black dots, one of which is near the base the others standing by twos above each other; besides the hindwings are beneath more or less striated black. In the ♂ the forewing is above broad black at the costal margin. German and British East Africa. — ab. **dama** Suff. deviates by the marginal band on the hindwing above and between the anal angle and vein 2 on the forewing, being only represented by marginal spots. German East Africa: Lindi. — ab. **sigiensis** Strand deviates by the indistinctness of the black dusting beneath and by the reduced black dots. Marginal band above like in the typical form; the ♂ is almost entirely without the dark costal-marginal band of the forewing above. It forms a distinct transition to *amenaida*. German East Africa. *mombasae*, *dama*, *sigiensis*.

**P. pauli** deviates from the other species except *clarensis* by both wings showing beneath at the margin 6 black longitudinal streaks on the folds of the areas 1 b (resp. 1 c) to 6; wings above with a broad, dark, proximally lobated marginal band, beneath with a fine black marginal line and dark fringes; discal dots always large and distinct. — **pauli** Stgr. Discal dots small, above often indistinct; basal dot of area 7 on the hindwing small. Nigeria; Loko. — ab. **radiata** Lathy (62 a) is without the discal dots and has beside the discal dots only one basal dot in the area 7 of the hindwing which is, however, as large as the discal dot. Nigeria. — ab. **multi-punctata** Lathy (62 a) has on both sides large and distinct discal dots. Nigeria. *pauli*, *radiata*, *multipunctata*.

**P. clarensis** Neave is unknown to me, but according to the description it seems to deviate from *pauli* only by the wings showing beneath light marginal spots between the ends of the veins Uganda: Toro. *clarensis*.

**P. petreia**. Both wings above with a broad, black, proximally almost entire marginal band extending on the forewing at the costal margin to the base and reaching the costal margin of the cell; discal dots large and distinct; usually 2 black dots in the discocellular of the forewing; discal dots are absent above and usually also beneath. — **petreia** Hew. has a reddish ground-colour. Ashanti to Uganda. — **preussi** Stgr. (61 f). Ground-colour of both wings ochreous-yellow. Sierra Leone. *petreia*, *preussi*.

**P. inconspicua** Ham. Druce (63 a) deviates from *preussi* (61 f) only by the black apical part on the forewing above reaching the apex of the discocellular and entirely covering the areas 5 and 6; the under surface is also darker, speckled more brown. Congo District: Kassai and Uganda. *inconspicua*.



- parapetreia*. **P. parapetreia** *Rbl.* deviates from *petreia* by the following marks: costal-marginal band on the forewing above very broad, covering almost the whole discocellular; both wings without a discal dot; marginal band of the hindwing broader: forewing with a basal dot in 1 b; under surface very dark. German East Africa: Uhuguru Mountains. — In ab. **derema** *Strand* the marginal band on the hindwing above is not broader than in *petreia*. Usambara.
- paucipunctata*. **P. paucipunctata** *Ky.* (61 f). Ground-colour pale ochreous-yellow; forewing above at the costal margin narrowly speckled dark and in the ♂ with a black apical spot ending pointedly at vein 3 and being 3 mm broad at the apex, besides only with one discal dot and a dot in the cell; the ♀ is without the apical spot; hindwing above without any other markings but a black discal dot; beneath the hindwings are everywhere and the forewing at the costal margin and apex finely striated dark, and beside the discal dot they usually have some basal and discal dots. Cameroon and Congo District. — **lunaris** *Weym.* has on the hindwing above a crescentiform, blackish-brown marginal band beginning at the middle of the costal margin, ending at vein 1 and being 5 mm broad at the apex of the wing; forewing with 6 basal dots, 5 in the cell and 1 in area 2; hindwing with a basal dot in 7; both wings beneath with discal dots. Sierra Leone. — **cydaria** *Sm.* deviates from *lunaris* only by the entire absence of the basal dots and by the discal dots beneath being developed only on the hindwings.
- tropicalis*. **P. tropicalis** *Bsd.* (61 f ♀). Wings ochreous-yellow, above with a discal dot and sometimes also with 1 or 2 basal dots; ♂ forewing above with a black marginal band which, however, is posteriorly broken up into separate marginal and submarginal dots; wings beneath with basal, discal and submarginal dots. This species has been known the longest of all the species of the genus and occurs in South Africa from Natal to the Delagoa Bay and the Manica District.
- lasti*. **P. lasti** *Sm. & Ky.* (61 g) deviates from *tropicalis* only by both wings showing above distinct discal dots and the hindwings besides also above separate (in the figure unfortunately confluent) submarginal dots: the basal dots are well developed; it also greatly recalls *P. mombasae* (61 f) from which it chiefly only differs by the absence of the dark marginal band on the hindwing above and the narrower marginal band on the forewing. British East Africa.
- occidentali-um*. **P. occidentali-um** *Auriv.* (61 g) has a bright orange-yellow ground-colour and large, distinctly prominent discal dots; both wings above without a marginal band and only with small streaks at the ends of the veins; apex of the forewing sometimes above with some black striae; forewings on both sides, hindwings beneath with numerous basal dots: wings on both sides with discal dots, only beneath with submarginal dots. Cameroon. — ab. **immaculata** *Suff.* is without the discal dots on the forewings above. Cameroon.
- laura*. **P. laura** *Ky.* (61 g) is white with a black apical band of a width of 4 to 5 mm on the forewing above, reaching vein 3 or 2; forewing besides at the costal margin speckled black with a black median dot and discal dots in 2 to 6 or at least in 2 and 3, beneath also with submarginal dots. Hindwing above with a median dot, basal dots in 2 and 7, 2 to 6 discal dots and small marginal dots, beneath also with some submarginal dots; under surface somewhat yellowish. Lagos.
- hewitsoni*. **P. hewitsoni** *Sm. & Ky.* (61 g) has, like *laura*, on both wings above distinct discal dots which, however, are here much larger than in *laura*, but it deviates by the broad blackish-grey marginal band on the forewing above; this band reaches the posterior angle and entirely or almost entirely encloses the discal dots; hindwings above with large marginal dots and usually also with submarginal dots. Old Calabar and Cameroon.
- limbata*. — **limbata** *Holl.* deviates by the marginal and submarginal dots of the hindwing above being united into a marginal band. Gabon and Ogowe.
- pardalena*. **P. pardalena** *Ham. Druce* (63 a, b) recalls the preceding species, but it is without the discal dots on both sides; ground-colour yellowish-white; all the black dots very large; forewing above with a broad, blackish-grey marginal band reaching the anal angle and enclosing the large submarginal dots; hindwing above with a white-spotted marginal band formed by the marginal and submarginal dots being united. Cameroon.
- christina*. **P. christina** *Suff.* (61 h) has, like *pardalena*, a light-spotted, black marginal band of about 2 mm width on the hindwing above, and differs from it only by all the black dots being smaller and the under surface of the hindwings being striated dark. Cameroon.
- catori*. **P. catori** *Baker* is unknown to me, but according to the description it belongs probably near *christina*. ♂ head, antennae and thorax black; metathorax brownish; posterior body ochreous-yellow; both wings straw-coloured; forewing at the costal margin almost to the costal vein dark brown; this colour flows together with the very broad black apex and marginal band; a black dot in area 11 and behind it one in the cell; these dots sometimes indistinct; a black spot at the apex of the cell. Hindwing with a black dot above the middle of the cell and one at the apex of the cell; margin broadly brown from vein 6 to vein 3. Under surface with the spots and markings showing through from above, and besides with a basal dot in area 2 of the hindwing and a curved row of 7 submarginal dots showing faintly through above. — ♀ similar to the ♂, but whiter;



hindwing with the submarginal dots above just as distinct as beneath; under surface like in the ♂, but with a postmedian row of 5 or 6 dots which are faintly indicated above in the dark area. Expanse of wings: 44 to 48 mm." Nigeria, in the Kabba Province.

**P. abraxas** *Dbl. & Hew.* (61 g). Wings light sulphurous yellow, at the base narrowly ochreous-yellow: *abraxas*. median dot distinct; discal dots entirely absent; submarginal dots only beneath present and sometimes not even there; forewing with 6 to 8 basal dots and above with a blackish subapical band ending at vein 4, and with separate marginal spots at the ends of veins 1 to 3. Hindwing with 2 (♂) to 6 (♀) basal dots and quite separate marginal dots. Gold Coast to Gabun. — ab. **maculata** *Ky.* (= yaunda *Karsch.* *hedwiga* *Suff.*) *maculata*. (61 h) is a form in which the marginal band of the forewing above more or less completely reaches the anal angle by the marginal spots 1 to 3 flowing together, the submarginal dots beneath being completely present. Cameroon.

**P. telesippe** *Grünb.* (63 c). This species being unknown to me is described as follows: wings yellowish-white with an ochreous-yellow base; apical spot of the forewing excised at the proximal margin in a width of 3 mm, in its whole extent closely appressed to the margin, reaching as far as vein 4 or extending a little beyond it; in the forewing 10, in the hindwing 7 marginal spots; both wings with a large round discal spot; basal dots: in the forewing 7 (in the areas 2, 9, 10, 11 and 3 in the cell), in the hindwing 2 (in 2 and 7). Beneath like above; submarginal dots of the forewing more or less distinct (in the areas 1 b to 6, 8, 9), but much less distinct than in *abraxas*, the hindwing small and rather indistinct (in 1 b to 6). South Cameroon and Spanish Guinea.

**P. cloetensi** *Auriv.* (= *elfrieda* *Suff.*) is very closely allied to *P. abraxas* and deviates only by an almost white ground-colour and the larger black marginal band on the forewing above, being coherent at least as far as vein 3 and being proximally almost straightly cut off; hindwing only in 2 and 7 with a basal dot. Southern Congo District.

**P. auga** *Karsch* (61 h) is also a species closely allied to *P. abraxas* and has the same basal and median dots; discal and submarginal dots are entirely absent. The species differs from all the others by the marginal dots particularly beneath being proximally prolonged to streaks: the marginal streaks of veins 5 to 8 on the forewing above are united into an apical spot. Cameroon to Congo.

**P. aspasia** *Grünb.* (63 c). Forewing whitish-yellow; hindwing darker, pale ochreous-yellow, only at the margin lighter; apical spot of the forewing very intensely dark, proximally excised, in its whole extent appressed to the margin and entirely fused with the marginal spots extending as far as the marginal spot of vein 3 or also abruptly ending before it; marginal spots large and very intense, at the apex of the forewing only separated by small light dots, at the costal margin partly confluent; hindwing with 5 large, distinct marginal spots; costal margin of the forewing between the base and apical spot densely speckled and spotted black; median dot only in the forewing large and distinct, in the hindwing very small or absent; basal spots of the forewings in the areas 9, 10 and 11 large and distinct, square, more or less fused with the costal-marginal spots, the spot in area 2 small or entirely absent, in the cell 3 spots; hindwing with only one basal dot (in the area 7) which may also be absent; in one specimen the hindwings are above without any spots except the marginal spots. — Under surface: forewing whitish-yellow, hindwing light ochreous-yellow, only the extreme border whitish-yellow; median dot on both wings distinct, but in the hindwing smaller; basal spots of the forewings like above, also the spot in the area 2 always distinctly present; hindwing with basal dots (in 2 and 7) or only in 7 with such a spot; forewing with submarginal spots in the areas 7, 5 and 4, the first being large, square, the two others rather indistinct." Spanish Guinea.

**P. phidia** *Hew.* Wings white; forewing at the costal margin at least as far as the cell, at the apex as far as the median dot and at the margin broadly yellow; both wings with black marginal dots united on the forewing above to a very narrow apical spot between vein 4 and the costal margin: besides the wings only have 3 black dots, a median dot and two basal dots of which those of the forewing are situate in the area 2 and in the cell, and those of the hindwing in 2 and 7. Ashanti and Togo.

**P. tripunctata** *Auriv.* (61 h). Both wings purely white with black marginal spots united at the apex of the forewing above to a black band of about 3 mm width, spotted light at the margin; each wing besides only with a median dot and 1 or 2 basal dots arranged as in *phidia*. Congo District.

**P. elpinice** *Grünb.* (63 c) is evidently closely allied to *tripunctata* and is described as follows: Apical spot in the forewing 2 to 3 mm broad, at the proximal margin deeply excised angularly, extending to vein 4; forewing with 10, hindwing with 7 marginal spots; median dot on both wings distinct, but not very large; in the forewings 3 or 4 basal spots (in the areas 2, 10, 11, as well as one in the cell); in the hindwing only one spot in the area 7. Under surface: submarginal spots of the forewings small and indistinct, entirely absent in the hindwings; basal spots as above, only in the forewing 2 dots in the cell, the second small towards the base." South Cameroon.

- torrida*. **P. torrida** Ky. (61 h) has white wings with black marginal dots and median dots, and besides no markings or only one basal dot each (in the cell of the forewing and in the area 7 of the hindwing); forewing above with a black apical spot of about 3 mm width, ending at vein. Gabun to the Kuilu River.
- tachyroides*. **P. tachyroides** Dew. (61 h, i) has white wings with black marginal dots united on the forewing above to an apical spot between the costal margin and vein 4; no other markings. Cameroon to Angola. — In ab.
- roidesta*. **P. roidesta** Suff. also the dark apical band of the forewing above is absent and is replaced by separate or almost separate marginal spots. North Cameroon.
- picena*. **P. picena** Hew. Wings yellowish-white with a large, black median dot; forewing in the middle and at the posterior margin almost purely white, above with a black costal margin and a broad black apical spot reaching vein 4; both wings without any marginal dots or other black markings. Ashanti.
- bitje*. **P. bitje** Ham. Druce (63 c). Wings white, beneath finely speckled or striated dark; forewing above at the base of the costal margin yellowish and with a small, narrow, black apical spot between the veins 6 and 9; hindwings beneath yellowish; both wings with a median dot and 2 basal dots (in the area 2 and in the cell of the forewing; in the areas 2 and 7 of the hindwing); otherwise without any black dots or spots. Cameroon.
- alba*. **P. alba** Dew. Wings on both sides of a purely white ground-colour without striae; forewing above at the apex only very little darkened; both wings with a small black median dot and besides only with one basal dot situate in the cell of the forewing and in the area 7 of the hindwing. Congo District: Mukenge.
- glagoessa*. **P. glagoessa** Holl. Wings purely white, at the base somewhat yellowish, with a black median dot, but without any other marking. Ogowe Valley.

### Third Group of Species.

The species belonging hereto were formerly wrongly placed to *Larinopoda* or *Liptena*, with which they correspond only in their exterior by the colouring and marking, but not in the neuration. The wings are somewhat shorter and broader than in the species of the third group from which they differ by the absence of the marginal, submarginal and discal dots, and of a separate median dot of the forewing. The black marginal bands above occur similarly also beneath, which is never the case in the species of the preceding group. Ground-colour always white.

### Review of the Species.

- A. Hindwing with a large, separate, black median dot on the transverse vein of the discocellular. Costal margin of the forewing and border of both wings more or less broad black.
- α. Forewing across the apex of the cell with a broad black transverse band connecting the costal margin with the border and dividing the white ground-colour into two large spots. Large species, 40 to 50 mm.  
*P. peucetia*.
- β. Forewing without this transverse band. Smaller species with an expanse of wings of 28 to 34 mm.
- \*. The costal margin of the forewing is broadly black and forms a spot or a dentiform projection at the end of the discocellular. The black marginal band of both wings is 2—3 mm broad.
1. The black spot, cohering with the costal margin at the apex of the discocellular of the forewing, is large and rounded off, and reaches the posterior angle of the discocellular (vein 4). The dark costalmarginal stripe does not extend or scarcely extends into the discocellular. *P. kirbyi*.
2. The dark costal-marginal stripe of the forewing extends far into the cell and forms at the apex of the cell a small projection which, however, does not extend beyond the middle of the lower discocellular vein.  
*P. muhata*.
- \*\*. The costal margin of the forewing is only narrowly black and does not form a spot at the apex of the cell. Marginal band of both wings very narrow.  
*P. sylphida*.  
*P. perfragilis*.
- B. Hindwing without a median dot. Both wings without any basal dots.
- α. Costal margin and border of the forewing more or less broadly black.
- \*. The dark costal-marginal stripe of the forewing reaches the discocellular and forms at its end a transverse spot reaching at least the middle of the lower discocellular vein. The apex and border



of the forewing is very broad, 4 to 5 mm, black. The dark marginal band of the hindwing about 2 mm broad. *P. sylpha*.

\*\* The dark costal-marginal stripe of the forewing gradually passes over into the apical spot and does not form a spot at the end of the discocellular.

1. Costal margin, apex and border of the forewing very broadly black. *P. ntebi*.

2. Costal-marginal stripe of the forewing narrowly black. Border of both wings very narrowly or on the hindwing scarcely black. *P. tirza*.

β. Wings unicolorously white without markings, only at the base of the costal margin of the forewing somewhat darkened. *P. paradoxa*.

The wings are in all the species on both sides similarly marked and coloured, white with black markings. The markings have been described in the Review and have therefore not been repeated in the species.

**P. peucetia** *Hew.* (61 i). East Africa from the Delagoa Bay to Mombasa. Comp. above. *peucetia*.

**P. kirbyi** *Auriv.* (61 i). Cameroon. Comp. above. *kirbyi*.

**P. muhata** *Dew.* (61 i). Cameroon to the Southern Congo District. Comp. above. *muhata*.

**P. sylphida** *Stgr.* (61 i). Cameroon to the Kuilu River. Comp. above. *sylphida*.

**P. perfragilis** *Holl.* is unknown to me, but according to the description it seems scarcely to differ from *sylphida*. The description runs: „Upper surface: antennae, head, thorax and abdomen black; wings transparent, white; costal margin and border of the forewing rather broadly, border of the hindwing only very narrowly black; a round black spot at the end of the discocellular of the hindwing. Under surface entirely like the upper surface; legs red.“ Ogowe. If *sylphida* and *perfragilis* are the same species, it must be called *perfragilis*, because the latter was described as *sylphida* a year before.

**P. sylpha** *Ky.* (61 i) is very much like *P. kirbyi* and differs nearly only by the absence of the median dot of the hindwing.

**P. ntebi** *Baker.* Uganda. Description comp. above. *ntebi*.

**P. tirza** *Hew.* corresponds to *P. sylphida* from which it deviates by the absence of the median dot of the hindwing. Gabun.

**P. paradoxa** *Ham. Druce* (63 c) is the most plainly marked of all the *Pentila*-species, since all the black markings have disappeared. Cameroon.

## 2. Group: *Liptenini*.

In the genera of this group the precostal vein of the hindwing is entirely absent.

In order to facilitate the review of the numerous genera, I distribute them on two groups.

### First Group of Genera.

The footstalk of the veins 7, 8 (and 9) of the forewing rises from the apex of the discocellular and is not at all separated from the vein 6 or only by a very short, almost vertical upper discocellular vein. Vein 6 may even rise from the footstalk of 7 to 9.

### Review of the Genera.

I. The veins 6 and 7 of the hindwing petioled. The veins 3 and 4 of the hindwing always separated. Vein 6 of the forewing from the footstalk of 7 to 9 or 7 to 8.

A. Wings entire-margined or with a uniformly undulated margin.

α. The forewing with 12 veins, of which veins 10 and 11 nearly always rise separately from the costal margin of the discocellular.

\*. The discocellular of the hindwing small and short, not reaching the middle of the wing. Vein

5 of the hindwing rises almost in the middle between vein 4 and the footstalk of 6 and 7.

7. *Mimacraea*.

\*\*. The discocellular of the hindwing of the usual length. Vein 5 of the hindwing rises much nearer at the footstalk of 6 and 7 than at the vein 4.

§. The transverse vein of the discocellular of the hindwing is curved between the veins 4 and 5. Vein 7 of the forewing generally terminates into the border. 8. *Pseuderesia*.

§§. The transverse vein of the discocellular of the hindwing is straight between the veins 4 and 5. Vein 7 of the forewing terminates into the apex of the wing or into the costal margin. 9. *Citrinophila*.

β. The forewing with only 11 veins.

\*. From the costal margin of the discocellular of the forewing there rise two separate veins. With vein 6 of the forewing only two veins are petioled. 14. *Eresinopsides*.

\*\*. From the costal margin of the discocellular of the forewing there only rises one separate vein. With vein 6 of the forewing three veins are petioled. 15. *Eresina*.

B. The forewing at the end of veins 4 to 6 strongly, the hindwing at veins 2 to 4 feebly lobated. Forewing with 12 veins, vein 8, however, very short. 16. *Argyrocheila*.

II. The veins 6 and 7 of the hindwing rise separately or from the same place.

A. Vein 6 of the forewing rises from the footstalk of 7 to 9.

α. Veins 3 and 4 of the hindwing distinctly separated at their rise. 10. *Teriomima*.

β. Veins 3 and 4 of the hindwing rise from the same place or on a footstalk. 18. *Euliphyra*.

B. Vein 6 of the forewing rises separately from the apex of the discocellular.

α. Veins 2 and 3 of the forewing bent posteriorly. The border of the forewing distinctly angled at vein 4. The costal margin of the hindwing deeply excised behind the middle. 19. *Teratoneura*.

β. Veins 2 and 3 of the forewing straight. Border of the forewing distinctly angled at vein 4. The costal margin of the hindwing straight or rounded off.

\*. The forewing with 12 veins. Vein 7 of the forewing straight. The palpi not or only feebly inflated.

†. The proximal margin of the hindwing as far as the anal angle straight or feebly convex.

§. The discocellular of both wings posteriorly obliquely extended, so that the posterior angle, particularly in the hindwing, is much more prominent than the anterior angle. The lower discocellular vein of the hindwing is very long, straight or somewhat distally bent. Veins 3 and 4 of the hindwing always separated afar at their rise. The two penultimate ventral joints of the ♀ strongly inflated hemispherically. 11. *Larinopoda*.

§§. The discocellular at the end transversely or only little obliquely cut off, so that the anal angle is not or only little prominent. The lower discocellular vein of the hindwing is more or less bent inwards. Veins 3 and 4 of the hindwing nearly always from the same place or petioled, very rarely separated for a short distance. The penultimate ventral joints of the ♀ not inflated.

1. Palpi with smoothly appressed scales; the terminal joint long, pressed together. The antennal club gradually thickened, long-extended, only little pressed together or not at all. 12. *Liptena*.

2. Palpi beneath covered with projecting hairs or hair-like scales; the terminal joint short, conical. Antennal club well defined, oviform and very much pressed together. 13. *Micropentila*.

††. The proximal margin of the hindwing deeply excised between the veins 1 a and 1 b.

17. *Aslanga*.

\*\*. The forewing with only 11 veins. Vein 7 of the forewing at its apex bent semicircularly. The two first joints of the palpi very much inflated, with appressed scales or somewhat hairy.

20. *Iridana*.

## 7. Genus: *Mimacraea* Btlr.

The species of this peculiar genus are generally large (50 to 65 mm), and by the shape of the wings as well as by the marking they recall species of the genera *Planema* and *Acraea*, particularly from the alliance of *A. bonasia* and *esebria*. The wings are beneath at the margin marked with dark and light longitudinal rays and the hindwing exhibits, just like in those *Acraea* 8 to 11 basal dots and sometimes also a transverse row of discal dots which, however, are all much nearer to the base.



The species are very little known yet and their variability has not yet been examined. Some of the species quoted here may therefore only be races of others. The stages of development and the habits of the larvae are unknown.

### Review of the Species.

- I. Apex of the forewing black without a light subapical band. Forewing on both sides with a curved, coherent, orange-yellow or reddish transverse band beginning a little behind the middle of the costal margin, gradually widening and reaching the proximal margin. On the hindwing beneath the light and dark rays of the marginal part are very long and reach at least the middle or usually the discal dots.
  - A. Hindwing above as far as the base reddish-yellow or at least without a sharply defined dark basal area; the dark marginal band narrow, 3 mm broad at most. The reddish-yellow transverse band of the forewing much broader at the posterior margin than at the costal margin.
    - $\alpha$ . The reddish-yellow transverse band of the forewing is moderately broad (in the middle about 3 or 4 mm) and does not cover the base of the areas 1 to 3. *M. charmian*.
    - $\beta$ . The reddish-yellow transverse band of the forewing is very broad as far as vein 4, covers the base of the areas 1 to 3 and even projects into the discal cell. *M. laeta*.
  - B. Hindwing above with a light median transverse band and a sharply defined, dark basal area; the marginal band usually more than 3 mm broad.
    - $\alpha$ . The orange-yellow transverse band of the forewing much broader at the posterior margin than at the costal margin. The median band of the hindwing above unicolorous, orange-yellow or reddish-yellow.
      1. The dark marginal band of the hindwing above is about 7 mm broad in the middle and reaches the proximal margin. The reddish-yellow median band thereby almost equally broad. *M. fulvaria*.
      2. The dark marginal band of the hindwing above is at the apex of the wing about 4 mm broad, gradually tapering posteriorly and ending pointedly at vein 3 or 2, not reaching the anal angle. The reddish-yellow median band thereby grows much broader at the proximal margin than at the costal margin. *M. paragona*.
    - $\beta$ . The orange-yellow transverse band of the forewing is at the costal margin just as broad or broader than at the posterior margin. The median band of the hindwing above entirely white or so at least at the proximal margin. *M. eltringhami*.
- II. The apex of the forewing with a light subapical band or almost quite light.
  - A. Hindwing above as far as or almost as far as the base coloured light without a large, black basal area.
    - $\alpha$ . Apical part of the forewing above almost quite light without a distinct subapical band. *M. dohertyi*.
    - $\beta$ . Apical part of the forewing above black with a sharply defined light subapical band. Forewing with a yellow or reddish-yellow spot of the posterior margin.
      - \*. Subapical band of the forewing reddish-yellow merging into sulphureous-yellow.
        - §. The (orange-)yellow spot of the posterior margin of the forewing does not cover the discal cell and usually neither the base of the areas 1 to 4. Hindwing beneath with long, dark, longitudinal rays in the marginal part.
          1. Hindwing beneath without a light median band, but with very long, black longitudinal rays proceeding from the margin and reaching the apex of the discal cell. *M. landbecki*.  
*M. schubotzi*.
          2. Hindwing beneath with a light yellow median transverse band separating the longitudinal rays of the marginal area from the basal area. *M. apicalis*.  
*M. neurata*.
        - §§. The orange-yellow spot of the posterior margin covers both the base of the areas 1 a to 4 and almost the whole discal cell. Hindwing beneath with triangular marginal spots bordered with black. *M. neokoton*.
      - \*\*.

§. Hindwing beneath at the margin with a coherent, narrow, black marginal band or marginal line. *M. marshalli*.

§§. Hindwing beneath at the margin between the veins with triangular, yellowish spots bordered with black.

1. The white subapical band of the forewing is large and touches the reddish-yellow spot of the posterior margin at vein 4. Expanse of wings: 60 mm. *M. costleyi*.

2. The white subapical band of the forewing is smaller and does not reach the spot of the posterior margin. Expanse of wings: 50 to 54 mm.

a. Subapical band of the forewing straight and coherently formed of 4 spots of the areas 4 to 6 and 9. Area 2 without a white submarginal spot. *M. skoptoles*.

b. Subapical band of the forewing at vein 6 almost interrupted; its spot in area 4 punctiform or indistinct. A white submarginal spot in area 2 near the reddish-yellow spot of the posterior margin. *M. gelinia*.

B. Hindwing above at the base black and then with a yellow or reddish median band and black marginal band.

α. Hindwing beneath with an equally broad, yellow median band separating the black-spotted basal area from the radiantly black marginal part.

\*. The spot of the posterior margin of the forewing plain, leaving above the discal cell free.

1. Median band of the hindwing above about 8 mm broad, towards the base indistinctly defined. The spot of the posterior margin of the forewing posteriorly strongly expanded, almost reaching the base of the areas 1 a to 3. Subapical band of the forewing purely yellow. *M. poulloni*.

2. Median band of the hindwing above only about 5 mm broad, sharply defined. Subapical band of the forewing ochreous-yellow. *M. neavei*.  
*M. flavofasciata*.

\*\*. The spot of the posterior margin of the forewing separated by black transverse streaks of the areas 1 a to 3 into an almost equally broad distal part and a proximal part formed of spots at the base of the areas 1 a to 4 and in the discal cell. *M. krausei*.

β. The hindwing beneath without a yellow median band, but in the marginal part with very long light and dark rays reaching or nearly reaching the discal cell. *M. masindae*.  
*M. pulverulenta*.  
*M. graeseri*.

*charmian*

**M. charmian** *Smith & Ky.* (62 b). Forewing above black with a curved reddish-yellow transverse band beginning at the costal margin somewhat behind the middle, extending behind the apex of the discal cell, leaving free the base of the areas 1 a to 6 and being expanded in the areas 2 and 1; beneath like above, but with a yellow transverse band and an apical part traversed by light and dark rays. Hindwing above reddish with a narrow, black marginal band tapering anteriorly and posteriorly, and a somewhat darkened base; beneath with a red-brown basal area spotted black, reaching the small discal dots, and outside of the latter with very long, light and dark rays. Cameroon.

*laeta*.

**M. laeta** *A. Schultze* (62 e) is very closely allied to the preceding species, but it deviates by the very extensive reddish-yellow transverse band of the forewing, being distally almost uniformly rounded, covering the base of the areas 1 to 3 and 8, extending even into the discal cell, and reaching the costal margin in 10 and 11; „of the basal part of the black ground-colour thus only remains a slight dusting at the base of area 1, the greater anterior part of the discal cell, a spot outside distinctly defined in area 4, reaching the discal cell anteriorly as well as the distally sharply defined base of the areas 5, 6, 9 to 11 and the basal third of the costal margin. Hindwing bright reddish-yellow, at the base with few, small black scales, and a similarly coloured, proximally irregularly dentate marginal band of an average width of 3 mm, disappearing posteriorly in the area 1 c. On the under surface the species resembles *M. fulvaria*, but it shows the following differences: on the forewing the ochreous-yellow transverse band already in 3 reaches the distal margin and proximally in 1 or 2 the base; on the hindwing the light internerval rays are towards the base defined by small, black lunae distally opened. Expanse of wings: 48 mm.“ South Cameroon. „The small insect slowly and cautiously flies during noon round thin poles of the brush-wood in the openings of the primeval forest.“



**M. fulvaria** *Auriv.* (63 a). Forewing black with an orange-yellow, posteriorly broader transverse band *fulvaria*, leaving free the base of the areas 1 a to 5; on the under surface the transverse band is lighter and the apical part decorated with light and dark rays. Hindwing above with a black basal area reaching the middle of the cell and being sharply defined, then with an orange-yellow median band of about 10 mm width and a black marginal band of about 7 mm width in the middle, being proximad radiantly prominent and reaching the proximal margin. Hindwing beneath with a red-brown, black-spotted basal area distally bordered by the small discal dots almost combined to a transverse line; the large marginal part with very long, dark and light longitudinal rays almost reaching the discal dots. Congo District on the Ubangi River.

**M. paragora** *Rbl.* is somewhat smaller than *fulvaria*, from which it deviates by the bright reddish-yellow median band of the forewing being curved almost in the shape of an S and reaching the posterior angle, the dark basal area of the hindwing above being shorter, but almost reaching the middle of the costal margin, the black marginal band of the hindwing above being narrower and not reaching the posterior angle, whereby the reddish-yellow median band of the hindwing above is narrow at the costal margin, but posteriorly very much expanded, covering the whole proximal margin with the anal angle. In the primeval forests on Lake Tanganyika.

**M. eltringhami** *Ham. Druce* (63 d). Forewing black, beneath in the apical part with indistinct longitudinal rays, on each side with an orange-yellow median transverse band being just as broad or broader at the costal margin than at the posterior margin and in the area 4 distally angularly broken. Hindwing above with a black basal area reaching the apex of the discal cell in the ♀, and with a black marginal band being equally broad in the ♂ and only about 3 mm broad, whilst in the ♀ it is about 8 mm broad at the apex of the wing, tapering off towards the posterior angle; the median band in the ♂ is 9 or 10 mm broad reddish, only at the proximal margin in the areas 1 a to 2 white, whilst in the ♀ it is all white, only about 6 mm broad and not reaching the costal margin, which is blackish. Hindwing beneath with a dark red-brown, sharply defined, black-spotted basal area; the marginal area is in the proximal part white, particularly in the areas 1 a to 4, distally darkened with very long, black longitudinal rays. Unyoro in the Buyoma Forest. — It resembles *Planema quadricolor* (58 c).

**M. landbecki** *Ham. Druce* (63 b, c). Forewing above black in the middle between the cell and apex *landbecki*, of the wing with a yellow subapical band composed of 5 spots of the areas 4 to 6, 8 and 9, and a triangular, reddish-yellow spot of the posterior margin, reaching the vein 4, but not covering the base of the areas 1 a to 3; the spot in the area 3 is small, not or little longer than it is broad; the under surface only differs by the apical part showing dark longitudinal rays, the subapical band being almost white, and the spot on the posterior margin yellow. Hindwing above as far as the base reddish-yellow, with a black marginal band, which is broader in the ♀ than in the ♂; beneath almost monotonously dirty-yellow or brownish-yellow, not or scarcely darker at the base; 9 black basal dots (in 1 c, 2, 7, and the cell) and in the marginal part very long, fine, black longitudinal rays reaching or almost reaching the discal cell; no discal dots.

**M. darwinia** *Btlr.* The genus *Mimacraea* was, in 1872, founded on this species according to a specimen *darwinia*, from an English private collection. Whether the typical specimen is still preserved, is unknown to me; the under surface is neither figured nor described by BUTLER, for which reason I was unable to place the species in the review. Judging from the design of the upper surface, it greatly approximates the following species. Forewing above black, with an orange-yellow subapical band in 4 to 6 and 8, and a broad, trapezoidal, orange-yellow spot on the posterior margin, ending broadly at vein 4, being 12 mm broad at the posterior margin, 7 mm broad at vein 4 and leaving free the base of the areas 1 a to 3. Hindwing above orange-yellow with a black, proximally somewhat lobate marginal band being 4 mm broad in the middle. West Africa (?).

**M. apicalis** *Smith & Ky.* (62 b). Forewing above black with a yellow subapical band composed *apicalis*, of 4 or 5 spots of the areas 4 to 6, 8, 9, and a broad, trapezoidal, orange-yellow spot on the posterior margin reaching the base of the areas 1 b to 3 or being there only little scaled black, and ending transversely at vein 4. Beneath there are at the apex and margin light and dark longitudinal rays and a reddish spot on the posterior margin forming also a longitudinal streak in the discal cell. Hindwing above orange-yellow with a black marginal band of 4 mm width, tapering off towards the proximal margin and uniformly emarginated on the proximal side. Hindwing blackish-grey with a light yellow median band of 4 or 5 mm width, separating the black-spotted basal area from the marginal band of about 8 mm width, decorated with light and dark longitudinal rays. If *M. darwinia* has a similar under surface, *apicalis* is probably only a form of this species, distinguished by the light yellow subapical band of the forewing. Togoland as far as the Kuilu River.

**M. neurata** *Holl.* is unknown to me and is described, as follows: forewing dark brown with a narrow, *neurata*, orange-red subapical band of 4 spots, the uppermost of which is small, the two following ones square and the last in area 4 triangular and nearer at the margin than the others; behind the subapical band a broad, orange-red spot on the posterior margin anteriorly bordered by the discocellular and parted by the black veins; on the under surface the reddish-yellow markings are lighter, and the marginal part is decorated with light and dark longitudinal rays. Hindwing above in the basal part orange-red with a very broad; black marginal band, a



black costal margin and black veins; beneath the basal third is red-brown with 9 or 10 black spots; then follows a light yellow median band indistinctly defined and growing broader towards the proximal margin; distally it borders on the broad marginal band decorated with longitudinal rays. Liberia.

*neokoton.*

**M. neokoton** Ham. Druce (63 c). Forewing above black with a light reddish-yellow subapical band and a very large, orange-yellow spot on the posterior margin covering both the base of the areas 1 a to 4 and almost the whole discal cell; only at the apex of the cell a black transverse spot; the under surface only deviates by exhibiting in each of the areas 2 to 7 a dirty yellow marginal spot proximally rounded off. Hindwing above orange-yellow with a black marginal band of about 3 mm width, beneath yellowish, scarcely darker at the base which is decorated with 11 black dots; at the margin in each area with a triangular, greyish-yellow spot sharply defined by black. South East Rhodesia and Gaza District.

*marshalli.*

**M. marshalli** Trim. (62 c). Forewing above black with a white subapical band composed of 4 or 5 spots, and a large, reddish-yellow spot on the posterior margin, almost entirely covering the areas 1 a and 1 b as far as the margin, the greatest part of the areas 2 and 3, the base of the area 4 and a large part of the discal cell; beneath it is marked as above, but with large yellowish marginal spots. Hindwing above reddish-yellow as far as the base, with a narrow, black marginal band, beneath greyish-yellow with 12 or 13 black dots in the basal half, and a black marginal band being only 2 mm broad in the middle and strongly narrowed in front and behind. Mashuna District, Rhodesia and Nyassa District. — By the distribution of the colours it reminds us of *Danaida chrysippus* and *Acraea encedon* (56 c).

*dohertyi.*

**M. dohertyi** Rothsch. Both wings above light orange-yellow, with a fine black marginal line, the forewing with a black costal-marginal stripe reaching the cell, extended behind the cell as far as vein 5, usually also forming a spot in area 4, and terminating about in the middle between the cell and apex of the wing; behind it generally a small, black costal-marginal spot; beneath entirely as above, but lighter. Hindwing beneath with black basal and discal dots, otherwise as above. British East Africa. — It corresponds to *Danaida dorippus* and *Acraea encedon* f. *daira* (56 g).

*costleyi.*

**M. costleyi** Ham. Druce is very much like *M. marshalli* (62 c) and deviates only by the white subapical band of the forewing being much broader and touching the reddish-yellow spot of the posterior margin at vein 4, by the marginal band of the hindwing above being narrower and particularly by the hindwing beneath at the margin exhibiting triangular spots bordered by oblique black lines. Nyassa District.

*skoptoles.*

**M. skoptoles** Ham. Druce. Forewing above black with a white subapical band formed of 4 or 5 spots of the areas 4 to 6, 9 and 10, and with a large, orange-yellow spot of the posterior margin, covering the whole basal half except a black transverse spot at the cell-apex, a black line in the cell and at the costal margin; the under surface deviates only by yellowish marginal spots bordered by black rays. Hindwing above as far as the base orange-yellow with a black marginal band of 3 or 4 mm width, beneath monotonously yellow with 9 black basal dots and long-extended, triangular, greyish-yellow marginal spots bordered by a thick, deeply dentated, black line. Nigeria.

*gelinia.*

**M. gelinia** Oberth. (62 b) so much resembles *skoptoles* that it suffices to state the differences. The white subapical band of the forewing consists of two parts touching each other at vein 6; the anterior part is composed of 3 spots in 6, 8 and 9, the posterior part, being situate more towards the margin, consists of two spots in 5 and 4, of which that in 4 is very small and punctiform or absent; besides there is a white submarginal spot in area 2, at a distance from the margin of about 4 mm. The black marginal band of the hindwing above is proximad bordered somewhat irregularly. The hindwing is beneath reddish-yellow with black veins bordered by a light yellow in the discal area. Usambara.

*poultoni.*

**M. poultoni** Neave (= *lutcomaculata* Grünb.). Forewing above black with an almost straight, equally broad, sulphureous-yellow subapical band and a reddish-yellow spot of the posterior margin, reaching vein 4, being in front narrowed and often reaching the base of the areas 1 b to 3; beneath the whole discal cell is red with some black dots, and the marginal part has the usual dark longitudinal rays. Hindwing above black with a reddish-yellow median band of about 8 mm width, beneath with a yellowish-grey, black-spotted basal area, a light yellow median band of about 5 mm width, and a marginal band of 7 mm width enclosing 6 greyish-yellow, triangular marginal spots and black longitudinal rays. British East Africa; Cavirondo and Uganda. — By its colouring and marking it is very much like *Acraea sotikensis* E. Sharpe (56 a).

*neavei.*

**M. neavei** Eltr. (63 b). Wings above black with a joint, ochreous-yellow, median transverse band of about 6 mm width, extending from the proximal margin of the hindwing as far as vein 4 of the forewing, being bent on the hindwing and straight on the forewing; forewing besides with an ochreous-yellow subapical band formed of three spots of the areas 5, 6 and 8. Wings beneath of a dark grey ground-colour and long, blackish, triangular marginal spots bordered with a light yellow; the median band is whitish-yellow, on the forewing broader (9 mm), on the hindwing narrower (4 mm) than above; the subapical band of the forewing is almost white; the basal area of the hindwing is large with 16 to 19 black basal and discal dots, some of the latter, however, being situate in the transverse band. Cameroon. — It strikingly imitates *Acraea oberthüri*



*Btlr.* (56 c, d), even the number of the black dots in the basal part of the hindwing beneath is almost exactly the same. A fact is that *Acraea oberthüri* deviates from the closely allied species (*viviana*, *karschi*, *cabira* and others having only 12 to 14 such dots) by 17 or 18 black dots of the hindwing beneath, and that *Mimacraea neavei* also deviates from all the other *Mimacraea* known by the more numerous, distinct, black dots of the hindwing beneath. But how is this resemblance to be explained? Can it have originated from a natural choice? If we should explain it thereby, we must also be able to explain that it may be of great moment in the struggle for existence. Now, the mimicry-theory says that the *Acraea* are not eaten or disliked by birds and other enemies, and that *Mimacraea neavei* is protected by imitating *Acraea oberthüri*. Although we assume this explanation to be correct, yet we must ask: would *M. neavei* not be as well protected, if it had only 14 black dots on the hindwing beneath or if the light median band of the hindwing above would be somewhat broader or somewhat narrower than in *Acraea oberthüri* and not of exactly the same width? Nobody will believe that the birds, before snatching away the butterflies, count the black dots beneath or measure the width of the light transverse band. It would be more probable to suppose that the total impression of 18 dots, compared to that of 14 dots, is so very different that they might be of value in the struggle for life. But I can neither believe this, particularly since there are other, very similar *Acraea* with only 14 or still fewer black dots, and which are probably also known to birds as disgusting or venomous. Might it be possible that *A. oberthüri* is more unpalatable than other similar *Acraea* and that, for this reason, it is more advantageous to resemble it exactly than the others? This question can only be answered by experiments in nature. If it should be answered in the affirmative, it still seems to me that the resemblance between *Mimacraea neavei* and *Acraea oberthüri* is too great to be explained merely by the struggle for life. The mimicry is much greater than seems to be necessary for deceiving the enemies of the butterflies. This is not the right place for discussing the interesting and much mooted theory of mimicry, but I only wanted to take the opportunity to emphasizing one of the numerous problems connected with it, and to give rise to further examinations in nature.

**M. flavofasciata** *A. Schultze* (62 c, d), according to the description, seems to be very closely allied *flavofasciata* to *neavei*. The short description says: „This species, resembling *Acraea oberthüri* above and beneath, belongs to the group with a light yellow transverse band across the middle of the hindwing beneath; upper surface: forewing black with an ochreous-yellow, anteriorly somewhat tapering spot of the posterior margin in the areas 1 to 3, being extended in area 1 towards the base, and an ochreous-yellow subapical band in 4 to 6, and 8, 9; hindwing black with an ochreous-yellow median band of about 5 mm width, distally dentated at the veins, running through the apex of the discal cell and covering the base of the areas 3 and 4. The under surface is almost exactly like that of *M. apicalis*. Expanse of wings: 48 mm“. South Cameroon.

**M. krausei** *Dew.* (62 b as *krausi*). Forewing above black with a yellow subapical band in 4 to 6, 9, *krausei*. and a red demi-band extending from the posterior margin to vein 4, of about 5 mm width and situate behind the middle, besides with red spots at the base of the areas 2 to 4, a dentate, red, longitudinal line in the discal cell and two red lines at the base of the area 1 b; hindwing above black with a red median band of 5 to 6 mm width; forewing beneath almost like above, but at the margin with light and dark longitudinal rays; hindwing beneath blackish with a lemon-coloured median band of 3 mm width, about 14 large, black basal and discal dots, and in the marginal part with black and light longitudinal rays. Near Mukenge in the Congo District.

**M. masindae** *Baker.* „Forewing brown with a light yellow, broad subapical band near the apex and almost touching the costal margin; a spot on the posterior margin, covering the area 1 a and the base of the areas 1 b to 3, is orange-yellow, reaches vein 4 and is from there to the anal angle obliquely cut off. Hindwing brown with almost the whole cell (except at the base and at the costal margin) and the whole median area right across the middle broadly orange-yellow. Under surface: forewing as above, but in the marginal part with dagger-like longitudinal rays like on the hindwings. Hindwing yellowish-grey with 4 basal dots in a transverse line and beyond them with 4 other dots in a bow, the two posterior ones of which are close together; the upper discocellular vein with a black dot; in the marginal part as far as the cell there are yellowish longitudinal rays bordered with grey, and dirty yellow longitudinal lines; a fine marginal line; fringes ochreous-yellow. Expanse of wings: 58 mm.“ British East Africa; Masindi in the Budongo Forest.

**M. pulverulenta** *A. Schultze* (62 d) „is most closely allied to *fulvaria*, but it differs from it at once *pulverulenta* by the coherent, reddish-yellow transverse band of the forewing being broken up into two separate light areas, a large, anteriorly tapering, distally more or less distinctly defined spot of the posterior margin in the areas 1 to 3, and a small subapical band in 4 to 6 and 8, 9. On the hindwing the black marginal band is proximad very indistinctly defined, and in 3 ♂♂ it extends on the internerval folds as far as the discal cell in the shape of densely transversely striated rays; in two specimens even the whole discal cell is densely strewn with small black scales. In contrast with it, the reddish-yellow ground-colour extends at the proximal margin to area 2, resp. area 3 in the shape of a very narrow band between the marginal band and the black fringes. In the only ♀ the subapical band is sulphureous-yellow. Beneath the new species differs from *fulvaria* only by the



transverse band of the forewing being here also broken up into a spot of the posterior margin and a subapical band. Expanse of wings: ♂ 50 to 53, ♀ 44 mm." Congo at the Stanley-Pool.

*graeseri*.

**M. graeseri** A. Schultze (63 d) „is very closely allied to the preceding, but it differs, beside the much smaller size, by the deviating colouring of the hindwing. The latter is black with a well-defined median band, being dentately extended at the veins. Expanse of wings: 39 mm." Congo at the Stanley-Pool.

*schubotzi*.

**M. schubotzi** A. Schultze (62 d) „is likewise very closely allied to *fulvaria* from which it differs merely by the transverse band of the forewing being broken up into a spot on the posterior margin and a subapical band. Expanse of wings: 51 mm. This form must perhaps be combined with the preceding as a local form." South Cameroon in the primeval forest near Yukaduma.

The three last species are, as is shown by the figures and as is also now admitted by Dr. A. SCHULTZE himself, the most closely allied to *M. landbecki* Druce.

### 8. Genus: **Pseuderesia** Btlr.

This genus was established by BUTLER already in 1874, and later on circumstantiated by ROEBER. The forewing has 12 veins, of which 2 to 4 rise separately, 4 from the posterior angle of the cell; 5 rises much nearer at the apex of the cell than at vein 4, whilst 6 emerges far behind the cell-apex from the footstalk of 7, 8, 9, and the veins 10 (usually) and 11 separately from the anterior margin of the cell. In the hindwing vein 4 rises from the posterior angle of the cell, vein 5 near the cell-apex and veins 6 and 7 on a joint footstalk from the apex of the cell; the discal cell is of a normal size and reaches at least the middle of the wing. Thereby *Pseuderesia* is immediately discernible from *Mimacraea*.

KIRBY and GROSE-SMITH were deceived by the colour and marking and described many species as *Pseuderesia* in fact belonging to *Liptena*. From the latter we may at once distinguish the *Pseuderesia*-species by vein 6 rising from the footstalk of 7 to 9.

All the species are above black with red or reddish-yellow spots, or reddish-yellow with a black apex of the forewing, black margins and some black dots. The sexes are above very different, the ♂♂ being more black with smaller reddish-yellow spots, and the ♀♀ by far more reddish-yellow.

As to the stages of development nothing has as yet been published.

The habits of the butterflies are described by D. CATOR, as follows: They need to be closely looked for, since they live in shady places, and they are difficult to capture when flying, firstly owing to the dark colour of their under surface and the small extent of the light colour above, so that they are only momentarily visible in their flight, and secondly because, in case they are not taken in the first attempt, they are easily chased away and fly off. If they are, however, discovered, when they rest, they are easy to capture; but one must closely look for them; they settle down on leafless branches and tendrils.

The species are still little known, and of many only one sex has been described. In order to facilitate the ascertaining of the species, I therefore supply a special review for each sex.

#### Review of the Males.

I. Both wings above with an area or spot changing from red to yellow.

A. Hindwing beneath red or with spots or dots changing from red to orange-yellow.

α. Hindwing beneath of a red ground-colour and with a black marginal band spotted whitish-grey, of a width of 2 mm. The red spot of the posterior margin of the forewing above is large, reaching vein 4.

*Ps. libentina*.

β. Hindwing beneath of a groundcolour changing from greyish-yellow to dark, and with red spots or dots; without a light-spotted marginal band, but sometimes with dark bows at the margin between the veins.

\*. Forewing above with a large, light spot on the posterior margin, reaching at least vein 3.

§. Forewing beneath with a red subapical band. Hindwing beneath with a postmedian, curved, red discal band.

1. The subapical band of the forewing extends from vein 3 to vein 7, and the discal band of the hindwing from the area 1 c to area 7; both are proximally and distally bordered by black.

a. The spot on the posterior margin of the forewing reaches vein 5.

*Ps. moreelsi*.

b. The spot on the posterior margin of the forewing reaches vein 3 at most.

*Ps. tessmanni*.



2. The red subapical band of the forewing beneath consists only of three spots of the areas 4 to 6, and the discal band of the hindwing of 6 large, proximally black-margined spots of the areas 2 to 7. The red spot on the posterior margin of the forewing above occupies almost the whole posterior margin and reaches vein 4. *Ps. favillacea.*

§§. The forewing beneath without a red subapical band. The deep orange-red spot on the posterior margin of the forewing above is very large, reaching vein 6. Hindwing beneath behind the middle with separate, red spots in 2, 3, 5, and sometimes also in 7.

*Ps. dinora.*

*Ps. carlota.*

\*\* . Forewing above with a very small red spot on the posterior margin, reaching vein 2 at most.

1. The spot on the posterior margin of the forewing is long and narrow and covers the area 1 a except at the base and at the margin. *Ps. gordonii.*

*Ps. bakeriana.*

2. The spot on the posterior margin of the forewing above is situated behind the middle of the posterior margin, rounded off or four-cornered, reaching at least the middle of area 1 b.

*Ps. isca.*

B. Hindwing beneath without red or orange-yellow spots.

- α. The red spot of the forewing above is rather large, distally rounded and reaches vein 1.

*Ps. catharina.*

*Ps. moyambina.*

- β. The red spot of the forewing above is narrow and oblong, almost vertical, bordered by the veins 2 and 4.

*Ps. eleaza.*

*Ps. picta.*

III. Forewing above one-coloured black without markings; hindwing above black with a red or orange-yellow area.

- α. Hindwing above red with a black proximal margin and black marginal band.

*Ps. minium.*

*Ps. mildbraedi.*

*Ps. ruilo.*

*Ps. phaeochiton.*

- β. Hindwing above black with a broad orange-yellow costal-marginal band reaching the apex of the wing and posteriorly vein 4 at most.

\*. Hindwing beneath blackish with indistinct reddish-yellow spots. *Ps. bicolor.*

- \*\* . Hindwing beneath dark yellowish-brown with black spots, but without red markings.

*Ps. semirufa.*

*Ps. fusca.*

- γ. Hindwing above black, at the proximal margin with an orange-yellow area reaching the anal angle, but not the discal cell. Hindwing beneath with red spots.

*Ps. debora.*

*Ps. catori.*

IV. Both wings above unicolorously black without markings. Forewing beneath with a red subapical band. Hindwing beneath with red and black spots.

- α. Hindwing beneath at the base blackish-grey.

*Ps. deborula.*

- β. Hindwing beneath at the base red or spotted red.

*Ps. nigra.*

#### Review of the Females.

I. Hindwing beneath spotted red or of a red ground-colour.

- A. Hindwing beneath with a black, whitish-spotted marginal band of 1 to 2 mm width and of a red ground-colour enclosing several black, white-bordered dots or spots. *Ps. libentina.*

B. Hindwing beneath without any sharply defined, black, light spotted marginal band.

α. Forewing beneath with a red or orange-yellow subapical band or similar, distinctly prominent subapical spots \*).

\*. The red or reddish-yellow spot on the posterior margin of the forewing above is large and reaches vein 6. The red discal area of the hindwing above reaches neither the base nor the margins.

1. The spot on the posterior margin of the forewing above is unspotted. The subapical band of the forewing beneath is composed of 4 angular spots of the areas 3 to 6 and an almost separated spot in 9; all the spots are proximally and distally bordered by a thick black line.

*Ps. moreelsi.*

2. The spot on the posterior margin of the forewing above with a black spot in 1 b. The subapical band of the forewing beneath composed only of three red spots of the areas 4 to 6.

*Ps. favillacea.*

\*\*. The red or orange-red spot on the posterior margin of the forewing above is extended somewhat beyond vein 4 at most. The subapical band of the forewing beneath composed of 4 spots of the areas 3 to 6.

1. Subapical band of the forewing beneath in 3 and 4 red and much narrower than in 5 and 6, where it is orange-yellow.

*Ps. variegata.*

2. Subapical band of the forewing beneath red and more equally broad.

*Ps. tessmanni.*

*Ps. nigra.*

β. Forewing beneath without a red subapical band, but sometimes in the black apical part finely watered reddish \*\*).

\*. The spot on the posterior margin of the forewing above is red, as far as vein 4 broad, then in 4 and 5 only 1 mm broad.

1. The spot on the posterior margin of the forewing beneath is undivided, far remote from the base of the areas 2 and 3.

*Ps. isca.*

2. The spot on the posterior margin of the forewing beneath in the areas 2 and 1 b parted by a black transverse streak; the proximal part is nearer to the base of these areas.

*Ps. minium.*

\*\*. The spot on the posterior margin of the forewing above is orange-yellow, large and of about 4 mm width in the areas 4 and 5.

1. Hindwing beneath light greyish-yellow, with distinct black and red spots.

*Ps. dinora.*

2. Hindwing beneath blackish-grey without any separate black spots.

*Ps. bakeriana.*

II. Hindwing beneath without red markings \*\*\*).

α. Both wings above as far as the black marginal band orange-yellow, dusted dark at the base; forewing above with a black dot in the cell, in 1 b and at the cell-apex.

*Ps. cellularis.*

β. Wings above black; forewing with an orange-yellow spot on the posterior margin; hindwing with an orange-yellow costal-marginal stripe.

*Ps. fusca.*

*libentina.*

**Ps. libentina** deviates from all the other species by the hindwing beneath being red with a black marginal band of 2 mm width, enclosing 7 whitish spots; in the red ground-colour there are black basal dots in 1 c and 7, a dot at the cell-end and black transverse streaks bordered with grey in 1 c to 7; forewing beneath with a broad, orange-yellow subapical band. — **libentina** Hew. was figured according to a ♀, in which the spot on the posterior margin of the forewing above only reaches vein 5. Old Calabar. — **zerita** Plötz (62 f) ♂. Wings above black; forewing with a large, red spot on the posterior margin, of about 8 mm width at the posterior margin, reaching vein 3 or 4 and leaving free the discal cell; hindwing with a large, red discal area not reaching the margins, growing broader towards the proximal margin and covering the apex of the cell; forewing beneath black without a spot on the posterior margin; the ♀ deviates by the spot on the posterior margin of the forewing being still larger, reaching vein 6, forming a transverse streak in the cell and occurring also beneath; the red area of the hindwing above is also larger than in the ♂. Cameroon to Gaboon.

*picta.*

**Ps. picta** Smith (63 e) ♂. Wings above black; forewing with a red transverse spot in the middle of the areas 2, 3 (and 4); forewing beneath black with a red transverse streak in the cell and at its apex, red subapical spots in 3 to 6, and at the margin whitish-grey with a black submarginal line; hindwing beneath as far as the grey marginal band whitish, but almost entirely suffused with red, with one large, black basal spot each in 1 c, 7 and the discal cell, and with thick black transverse streaks in the centre of the areas 1 c to 7; the marginal band with black submarginal streaks in 1 c to 6. ♀ unknown. Nigeria near Warri.

*moyambina.*

**Ps. moyambina** Baker is described as follows: ♂. Both wings brown, forewing with a large,

\*) To this division probably also belong the unknown ♀♀ of *Ps. picta*, *catharina*, *cleaza*, *debora*, *deborula* and *moyambina*.

\*\*) To this division probably also belong the unknown ♀♀ of *Ps. bicolor*, *carlota*, *gordoni*, *mildbraedi*, *rutilo* and *phaeochiton*.

\*\*\*) To this division certainly belong the unknown ♀♀ of *Ps. russulus* and *semirufa*.



orange-red postmedian spot at the anal angle; fringes brown speckled with white. Under surface: forewing in the two first thirds brownish-grey, in the last third orange-red, at the apex and margin yellowish and towards the anal angle ochreous-yellow; costal margin grey, speckled dark; a broad, dark, oblique transverse band behind the cell in the red area and a curved, dark transverse line before the apex; a black marginal line. Hindwings light grey, almost entirely suffused with red, only behind the cell, at the costal margin and border grey; a black dot behind the middle of the costal margin and a black basal dot in 1 c, a large, black, light-curved spot before and behind the cell and at its apex; an irregular, red, postmedian transverse band finely bordered with black; the grey marginal band speckled black. Expanse of wings: 34 mm." Sierra Leone.

**Ps. catharina** *Btlr.* (62 f as *eleaza*). Wings above black with white-spotted fringes; the forewing *catharina*. with a large, orange-red spot not covering the base of the areas 2 and 3, but also forming a smaller spot in 1 b and 4; this spot is about 5 mm broad in 2 and distally rounded off; near the cell-apex a red transverse streak. Forewing beneath brown mixed with a silvery grey, the basal half with three thick, black transverse bands (two in the cell and one at its apex), of which the second and third are separated in the cell by a red spot; behind the cell-apex a broad, almost triangular, orange-red spot almost reaching the posterior angle and suffused with brown towards the posterior margin; outside of this spot a broad, dentate, black subapical band distally bordered with red; marginal part grey with a black submarginal line extended spot-like in 5 and 6, and a black marginal line. Hindwing beneath silvery grey, in the basal half speckled reddish; a spot at the base, one at the cell-apex and one at the costal margin red; three smaller spots at the base and three larger ones in the middle black bordered by whitish; behind the middle an irregular transverse row of 7 or 8 black spots or transverse streaks, distally bordered with red; a submarginal row of black transverse streaks. ♀ unknown. Near Whydah on the Slave Coast.

**Ps. eleaza** *Hew.* is also only known in the male and is obviously very closely allied to the preceding *eleaza*. from which it chiefly differs only by the red spot on the forewing above appearing only as a red transverse streak 1 to 1½ mm broad of the areas 1 b to 3, and by the ground-colour of the forewing beneath being darker, blackish. Old Calabar.

**Ps. variegata** *Smith* (62 f). Of this species only the ♀ is known. In my opinion, however, *variegata* *variegata*. is probably the ♀ of *catharina* or *eleaza*. Wings above black with yellow markings; forewing with a yellow spot of the posterior margin situate near the posterior angle, 6 mm broad at the posterior margin, reaching the base of vein 2 in 1 b and ending pointedly in front in the area 4, the discal cell with two small, yellow transverse spots and near the margin 4 yellow submarginal spots in 3 to 6, of which those in 5 and 6 are more remote from the margin. Hindwing above yellow at the base, at the costal margin and proximal margin, and at the border broadly blackish with small, yellowish submarginal spots in 2 to 5. Forewing beneath with a large, triangular, light yellow spot of the posterior margin, reaching the posterior angle and the footstalk of 7 to 9, with red submarginal dots in 2 and 3, and a yellow subapical band in 4 to 6, which are separated from the spot of the posterior margin by a broad, oblique, black transverse band, in the basal part three black transverse spots separated by red. Hindwing beneath of a grey ground-colour and black and red spots arranged as in *catharina* and *eleaza*. Gold Coast to Sassa on the Upper Ubangi.

**Ps. debora** *Ky.* (62 f). Only the ♂ is known. Wings above black with white-spotted fringes. Forewing *debora*. unmarked, hindwing with an oblong, orange-yellow inner-marginal spot reaching vein 3, but neither the base nor the margin. Both wings beneath monotonously dark blackish-grey; forewing only with a red black-bordered subapical band in 4 to 6; hindwing with 2 red dots at the base of the costal margin in 8, one black basal dot each in 1 c and 7, a red transverse band across the middle of the cell of three spots in 1 c, 7 and in the cell, beyond this band with one black dot each in 1 c and 7, then with a red transverse streak of spots in 7 and the cell, with a black dot on the transverse vein of the cell and behind the middle with a red discal band composed of three parts, bordered with black on both sides; the first part is straight and consists of three spots of the areas 1 c to 3, the second is situate nearer at the margin and likewise consists of three spots (in 4 to 6), and the third is situate much nearer at the base and consists of a single spot in 7; marginal area without markings. Cameroon to the Ogowe River.

**Ps. catori** *Baker* is described as follows: „Both wings above black with white-spotted fringes; hind- *catori*. wing with an intensely yellow area behind the discal cell as far as the proximal margin and anal angle. Under surface of both wings blackish-grey; forewing with a red subapical band of 5 spots, of which the first and last are the smallest; hindwing with the basal area more or less spotted red and with three black spots in a triangle, one each in 1 c and 7, and a larger one at the cell-apex; a submarginal, very irregular, red transverse band bordered with black on both sides.“ Sierra Leone. — It seems to me to be identical with *Ps. debora*.

**Ps. deborula** *Auriv.* (62 f) is wrongly regarded as the ♀ of *debora* by GROSE-SMITH. It deviates from *deborula*. it only by both wings being above unicolorously black and the two first parts of the red discal band on the



hindwing beneath forming a coherent bow parallel to the margin. Kuilu River.

*nigra*. **Ps. nigra** Cator ♂. Both wings above unicolorously black without markings; fringes spotted white. Forewing beneath black, towards the anal margin blackish-grey; traces of three black spots in the discal cell with a red spot between the second and third; the apex is spotted dark with 4 red spots, two before the apex and two before the margin; hindwings grey, appearing as if they were scaled off, with several black and red spots; the base of the wing is suffused with red, with a small, light-curved, black dot at the base of the area 7 and two similar dots in the cell, of which the distal one is larger and accompanied by a dot in 1 c; a large, black spot in 7, the apex of it opposite the cell, is accompanied by a red spot; a transverse band extending from the apex of the wing to the proximal margin, is proximally black, distally red, and in the middle broader. — In the ♀ both wings are above light ochreous-yellow; forewing with the costal margin broad blackish-brown, behind the cell still broader and then gradually tapering towards the anal angle; three spots in the cell and some behind it; the ground-colour behind the cell in 1 b and 1 c suffused with brownish almost as far as the posterior margin; fringes brown, spotted white. Hindwing above at the costal margin broadly brown and with a very broad, brown marginal band growing broader towards the anal angle; base brownish; fringes spotted white. Forewing beneath light orange-yellow, base and costal margin blackish; the discal cell with three spots increasing in size in the cell and one in 1 b, which touches the second and third spots of the cell; apex of the wing as in the ♂, but the subapical band proximally bordered by a broad, black band. Hindwing beneath yellowish-grey with the same markings as in the ♂ instead of the red spots, but with orange-yellow ones. Expanse of wings 30 (♀) to 34 (♂) mm. Sierra Leone. — The ♀ approximates *Ps. variegata*, and the ♂ obviously resembles *Ps. catharina* and *eleaza*. My presumption that *Ps. variegata* is the ♀ of *eleaza* thereby becomes still more probable.

*moreelsi*. **Ps. moreelsi** Auriv. (63 d) ♂. Wings above blackish-brown; forewing with a large red spot of the posterior margin, narrowed anteriorly, reaching vein 5 and forming also a small transverse spot in the cell; the hindwing above with an orange-red discal area covering the apex of the discal cell, the proximal half of the areas 2 to 4, and a part of the areas 1 c and 5. Both wings beneath of a grey ground-colour; the forewing darkened at the posterior margin and before the apex with a red subapical band bordered with black, formed of 5 spots of the areas 2 to 5 and 9. Hindwing beneath with three red transverse bands and three black dots; the first transverse band near the base narrow and straight of 4 spots in the areas 1 c, 7, 8 and the cell; the second near the cell-apex of three spots in the areas 2, 7 and the cell; the third is situated near the margin and is on both sides broadly bordered with black and consists of 8 spots of the areas 1 c to 8; the black dots are situated in 1 c, 7 and at the apex of the discal cell. — The ♀ deviates from the ♂ only by the red spot on the posterior margin of the forewing above being larger, reaching vein 6 and appearing also beneath, though lighter. The red area of the hindwing above is also somewhat larger. Congo District on the Ikelemba River.

*favillacea*. **Ps. favillacea** Grünb. (63 e) ♂. Forewing above black with a large red spot on the posterior margin, occupying almost the whole posterior margin and reaching vein 4 anteriorly narrowed; hindwing above black with an extensive, red discal spot. Forewing beneath in the middle blackish-brown; costal margin, apex, and border ashy-grey, finely speckled white; in the areas 4 to 6 a red subapical band formed of 3 single spots; the inner-marginal spot considerably lighter than above, only reaching to vein 3. Hindwing beneath ashy-grey with a slight bluish tint and dispersed white speckling; above vein 8 a short, red basal streak, in the cell two thick, red transverse streaks, the proximal one prolonged beyond the posterior margin of the cell, the distal one beginning with a broad spot in area 7; the distinct, red discal band is formed of 6 large spots proximally margined black in the areas 2 to 7; the discocellular vein with a distinct black spot, besides one distinct spot each above and below the middle of the cell. — ♀. Border of the forewing at the apex spotted white; the red spot on the posterior margin extending more in front, as far as vein 6, enclosing a distinct black spot below the base of vein 2; the cell in the middle likewise spotted red; in the hindwing the spot is confined to the posterior half of the wing. In the fore- and hindwing the spots are irregularly torn at the margins, at the proximal margin intermixed with black speckling. On the under surface the spot of the posterior margin of the forewing extends to vein 6 like above, the distal transverse streak in the cell of the hindwing is absent, and the discal band extends into area 1 b. Expanse of wings, 29 to 30 mm. Spanish Guinea: Alcu.

*mapongua*. **Ps. mapongua** Holl. is presumably allied to *Ps. moreelsi* and *tessmanni* and is described as follows: „Above red with the costal margin, apex and border of both wings broadly black; besides there are on the forewing near the base three or four dark, united spots, the hindwing has a small, black spot behind the cell at the proximal margin. The under surface is preponderately grey; forewing with a large black spot at the apex of the cell, a subapical row of 4 square red spots which are proximally bordered by black, and between this row and the discal cell with a broad, orange-red median transverse band extending from the costal margin to the anal angle and turning whitish behind; the hindwing exhibits two small, black dots near the base and a band of red spots right across the discal cell; behind the cell and at its apex two large, black spots; then follows a curved, submarginal row of six red spots, proximally very intensely, distally little bordered



with black; both wings with a fine, black marginal line, and the grey fringes have black spots at the end of the veins." Expanse of wings: 30 mm. Ogowe Valley near Kangwe.

**Ps. tessmanni** *Grünb.* (63 e) is closely allied to the two species mentioned last. ♂. Forewing above *tessmanni*. black with a red spot on the posterior margin, reaching vein 3 at most and being  $6\frac{1}{2}$  to  $8\frac{1}{2}$  mm broad at the posterior margin. The spot of the hindwing is large, semicircular, leaving free the anterior part, filling up the posterior, greater half except a narrow border. Beneath similar as in *favillacea*, in the forewing the spot of the posterior margin is absent or it is only faintly indicated at the margin, the subapical band extends across the areas 3 to 6; in the hindwing the two broad, basal transverse stripes are usually fused at the anterior margin of the cell; the basal stripe in area 8 is broad, ferruginous; discal band broad and distinct in the areas 1 b to 7; beside the discocellular spot 5 to 7 black basal spots. Subapical band of the forewing and discal band of the hindwing show inside and outside distinct, black borders and are besides accompanied on the outside by rather distinct, white submarginal spots. Forewing with a distinct black discocellular spot. — ♀. The spot on the posterior margin in the forewing broader, extending somewhat beyond vein 4, in the cell likewise traces of a red spot. The spot of the hindwing is oval, extending less towards the base than in the ♂. Forewing beneath with an extensive, yellowish-red spot on the posterior margin, the other marks as in the ♂. Spanish Guinea.

**Ps. russulus** *Ham. Druce* (63 e). Wings above black; forewing with a large, distally arcuate, proximally *russulus*. almost straight red spot on the posterior margin, which is about 9 mm broad at the posterior margin and reaches anteriorly vein 6; hindwing with a large, red discal area covering the apical half of the cell and the proximal part of the areas 2 to 7; marginal band about 2 mm broad. Forewing beneath dark yellowish-brown, speckled with black, with some black dots in the cell and black veins; the spot on the posterior margin as above, but much lighter and in the areas 3 to 5 distally bordered with black. Hindwing beneath yellowish-brown, dusted dark, with 7 or 8 large, black dots at the base (2 in 1 c, 2 in the cell, 3 in 7 and one at the cell-apex) and with two undulate, black, arcuate antemarginal lines enclosing moon-shaped white submarginal spots and yellowish marginal spots. The species deviates from all the species similarly coloured above by the hindwings being without the red spots beneath. Congo District on the Upper Cassai.

**Ps. cornucopiae** *Holl.* was described as *Durbania*, but it probably belongs to the genus *Pseuderesia*. *cornucopiae*. The species has an expanse of only 24 mm and is described, as follows: „♂. Antennae, head, thorax, and abdomen above black, beneath grey; the ground-colour of both wings above intensely red, on the forewing confined to a curved transverse band gradually growing broader posteriorly and extending from the middle of the costal margin to the anal angle and the middle of the proximal margin; the transverse band thereby almost has the shape of a cornucopia; the forewing is otherwise dark brown; hindwing with an irregular, dark marginal band and at the proximal margin densely speckled dark. Forewing beneath with the same red transverse band as above, the red colour, however, not so bright; costal margin and apex broadly violettish-grey with a small, fine brown dot, the base and a subapical transverse band sooty-brown; hindwing with the same violettish-grey ground-colour as the apex of the forewing, and speckled with small brown spots; behind the middle with an irregularly curved, narrow, black transverse line and at the border with almost spear-shaped brown spots between the ends of the veins." Ogowe Valley. — If this description was really taken from a male, the species is probably most closely allied to *Ps. russulus*.

**Ps. isca** *Hew.* (62 f, g). ♂. Forewing above jet-black, behind the middle of the posterior margin with *isca*. a minute, red spot of only about 1 mm width, reaching the fold of area 1 b. Hindwing above black with a large red costal-marginal spot being narrow at the base, gradually widening distally, and distally rounded off in a bow, reaching posteriorly vein 3 and forming also a small, triangular spot in 2; the proximal margin is consequently very broadly (as far as into the cell and to vein 3) black and the black marginal band gradually tapering towards the apex of the wing. Wings beneath blackish-grey; forewing with a large, orange-red spot on the posterior margin reaching vein 4 and continued almost to the costal margin by small red spots; 2 or 3 fine red transverse streaks in the cell and some indistinct, red spots in the apical part. Hindwing beneath dark grey with 4 or 5 red dots at the base and an almost coherent, curved transverse band across the middle, consisting of 7 red spots bordered with black of the areas 1 c to 7; marginal part with some indistinct red striae. — The ♀ only deviates by the markings above being lighter, reddish-yellow, the forewing above exhibiting a large spot on the posterior margin, which is broad as far as vein 4 and is then continued almost to the costal margin as a narrow stripe, the forewing showing at the base two red transverse streaks in the cell and one in 1 b and the red spot of the hindwing above covering almost the whole cell, except some black spots. A very common species, occurring from Old Calabar to the Congo River.

**Ps. minium** *Ham. Druce* (62 g) is very much like *Ps. isca*, but in both sexes it deviates by the *minium*. red area of the hindwing above being much larger, since it is extended to the base and vein 1 b; the base with several black dots. Besides the forewing of the ♂ is above unicolorously black without markings, beneath without a spot of the posterior margin, and the spot on the posterior margin of the forewing beneath is in the ♀ parted by a black transverse streak of the areas 1 b and 2. Cameroon, near Bitje.



*osheba*.

Nor is the description of **Ps. osheba** *Holl.* indicative of being a correct guide, but it is presumably the most closely allied to *Ps. minium* *Ham. Druce*. The description runs thus: „Head and body above black; border of booth wings undulate, and the fringes between the ends of the veins narrowly grey. Forewing broad black with a small red spot near the base and a larger, similar spot at the posterior margin; hindwing red, uniformly bordered with black, in some specimens the black colour is narrower at the proximal margin; a number of small black spots at the base. The under surface is brown with a lead-coloured lustre and few black spots at the base of both wings; the red spot on the posterior margin of the forewing appears also beneath and is anteriorly accompanied by a small red spot; at the base of the hindwing there are some few red dots and a curved transverse band of red dots traverses the middle of the wing which is darker there than it is otherwise. The ♀ in fact only deviates from the ♂ by the apex of the forewing being obtuser. Expanse of wings: 27 mm.“ Gaboon on the Upper Ogowe River.

*mildbraedi*.

**Ps. mildbraedi** *A. Schultze*. „Forewing above entirely black; hindwing above glaringly brick-coloured red, the proximal margin and a posteriorly unnoticeably narrower marginal band of an average width of 4 mm are black; of the same colour are: the sharply defined base strewn with some small red scales, a transverse spot in area 1, continued anteriorly by the black base of area 2, and another one in the middle and at the end of the discal cell. Under surface sooty black; forewing with a violettish-grey basal third of a silky lustre, and a similarly coloured margin of 2 mm width; in the areas 1 to 5 one blurred, black discal spot each (those in area 4 and 5 more towards the base), one spot each of the same colour in the middle and at the end of the discal cell, of which the former is distinctly scaled red. On the hindwing the violettish-grey colouring is still more extensive, since the marginal band of an average width of 3 mm being expanded posteriorly flows together with the grey basal half at the proximal margin; the black discal spots are indistinct in 4 to 6, in the other areas rather large and filled up with red; besides there are two large basal dots each in 1 c and in the cell. ♀ unknown.“ South Cameroon, near Sangmelima. — It is presumably only a form of the following species.

*rutilo*.

**Ps. rutilo** *Ham. Druce* (63 e) ♂. Forewing above unicolorously black without markings; hindwing above black with an orange-red area, reaching the costal margin, distally bent and bordered by the black marginal band of almost 2 mm width, proximally bordered by vein 2, and forming three small red spots in the area 1 c; it reaches the base, covers the whole discal cell and is there decorated with a black dot in the cell and at the cell-apex. Both wings beneath sooty black, at the base and margin violettish-grey; hindwing with a red dot at the apex of the cell and with some indistinct, red, small spots at the base. ♀ unknown. Cameroon, near Bitje.

*phacochiton*.

**Ps. phacochiton** *Grünb.* (63 e) ♂. „Forewing above quite black; hindwing with an extensive, red spot proceeding from the base and bordering on the costal margin; proximal margin and border broadly black; the interior margin of the spot with irregular, black indentations. Under surface blackish-grey with very indistinct, blurred, spot-like, darker shades; hindwing in the middle scaled reddish-brown, close behind the cell with a transverse row of rather indistinct red dots in the areas 1 b to 4; a red dot at the base of the cell and 2 in the middle of the cell only faintly indicated. Expanse of wings: 23½ mm.“ ♀ unknown. Spanish Guinea: Macomo. — Also this form seems scarcely to differ from *Ps. rutilo*.

*gordonii*.

**Ps. gordonii** *Ham. Druce* (62 g) ♂. Forewing above black, at the posterior margin in area 1 a with an orange-yellow longitudinal streak reaching neither the base nor the margin and exactly fitting the reddish-yellow colour of the hindwing. Hindwing above orange-yellow with a black marginal band and a black proximal margin reaching vein 1 b. Forewing beneath dull blackish-brown, at the margin lighter; two red spots in the cell and a rather broad, red transverse band behind the cell from the costal margin to vein 4. Hindwing beneath from the base to beyond the middle with interrupted transverse bands of orange-yellow alternating with brown; the ground-colour behind the middle at first darker and then lighter at the margin. ♀ unknown. Benin Coast.

*bakeriana*.

**Ps. bakeriana** *Cator* is unknown to me, but it seems to be allied to the preceding species. ♂. Forewing above black, at the proximal margin with an orange-yellow longitudinal streak extended somewhat beyond vein 1, but reaching neither the base nor the margin. Hindwings above orange-yellow with very broad, black posterior margins; the marginal band quickly tapers off towards the costal margin. Both wings beneath blackish-grey, hindwing somewhat lighter; forewing at the costal margin speckled red with a red costal-marginal spot behind the apex of the cell; this spot coheres with a red striation extended to the anal margin; in the red colouring a short, black streak. Hindwing beneath with three irregular, interrupted, reddish transverse bands; the third transverse band is distally bordered by a broad black band, then follow red striae, a black band and finally again reddish striae, as far as the border. In the ♀ the more roundish forewing above and beneath exhibits a large, orange-yellow spot on the posterior margin; hindwing above like in the ♂, beneath also almost like in the ♂, but lighter and without any red. Expanse of wings: 30 to 32 mm. Sierra Leone during the dry period.

*dinora*.

**Ps. dinora** *Ky.* (62 g) is a species very peculiarly-marked, particularly beneath. ♂. Forewing above black with a very large, orange-yellow spot of the posterior margin, reaching vein 6 and the anal angle, of about 9 mm width at the posterior margin and also forming a transverse spot in the cell, by which the large,



black median spot is bordered. Hindwing above orange-yellow, at the base, proximal margin and border narrowly black; a black transverse streak at the cell-end. Forewing beneath blackish-grey with a light yellow spot on the posterior margin, yellow marginal spots in 2 to 4 and a large, yellow apical spot separated from the spot of the posterior margin by an oblique, blackish transverse band; costal margin striated black. Hindwing beneath greyish-yellow with numerous black dots (in 1 b, 3 in c, one each in 2 to 6, 4 in 7, 1 in the cell and a large one at the cell-end) and three large, postmedian, red spots in 2, 3, and 5; at the margin a black cucullate line indistinct in the areas 5 to 7. The ♀ only deviates from the ♂ by lighter and somewhat larger, yellow areas above. Cameroon.

**Ps. carlota** Suff. (63 e) ♂. Forewing above black with a large, orange-red spot on the posterior margin, reaching vein 6 and the anal angle; hindwing above at the base, at the proximal margin as far as vein 2 and at the margin black about  $1\frac{1}{2}$  mm broad, otherwise orange-red with a black spot at the cell-apex. Forewing beneath blackish-grey with a red hue; at the costal margin small, grey streaks and dots; a yellow marginal spot in 9, connected with a yellow apical spot of 4 mm width by indistinct, whitish-yellow spots; a fine, black marginal line, before it in the areas 2 to 4 one indistinct, yellow submarginal spot each; the distal half of the area 1 b and the distal quarter of area 2 are light orange-reddish. Hindwing beneath yellow, towards the margin intensely hued and dotted blackish; 2 black basal spots next to each other in area 7; there are 10 black discal spots: 2 in 1 c, one at the cell-apex, one each in 2 to 8, of which that in 5 sends a bright red square spot of 2 mm length, those in 2, 3 and 7 a shorter one almost reaching to the distal-marginal band; marginal band black, in 1 c indistinct, in 2 to 4 broader and enclosing one small, yellow spot; in the areas 5 to 7 the yellow colouring is expanded at the expense of the black into anal spots covered by the apex of these areas. North Cameroon: John Albert Hill. — This description fits to *Ps. dinora* so well that *carlota* presumably does not differ from it.

**Ps. bicolor** Smith & Ky. (62 f) ♂. Forewing above black without markings; hindwing above black with an orange-yellow, distally expanded costal-marginal stripe which is posteriorly almost straightly cut off and reaches vein 4; towards the margin it is bordered by a narrow, anteriorly tapering, black marginal band. Both wings beneath black, strewn with several indistinct, reddish scaled spots; forewing behind the middle with a reddish-yellow spot of the posterior margin, reaching vein 3 and also forming a small spot in area 3. ♀ unknown. „Accu“.

The three following species differ from all the preceding (except *russulus*) by the hindwings being beneath without any red spots at all.

**Ps. semirufa** Smith is above entirely like *Ps. bicolor* and only deviates by its narrower forewings. Forewing beneath blackish with a broad, dirty yellow spot of the posterior margin, reaching vein 3; hindwing in the anterior longitudinal half dirty yellow, in the posterior half blackish-grey, at the base with 7 black dots (2 in 1 c, one in the cell, 3 in 7, and one at the end of the cell) and with some blackish antemarginal dots or bows. Sierra Leone.

**Ps. fusca** Cator. ♂. Forewing above unicolorously black; hindwings black with orange-yellow costal-marginal stripes entirely like in *bicolor* and *semirufa*. Forewing beneath dark grey with a small, black spot at the end of the cell and at the base of vein 2; behind the cell a curved discal transverse row of small black spots and a similar submarginal row; hindwing beneath ochreous-yellowish brown with 2 black dots at the base in area 7, one at the end of the cell and one in 1 c; behind the cell a fine, interrupted, blackish transverse band formed of spots from the costal margin to the proximal margin and beyond it an indistinct, submarginal row of black dots. — ♀. Both wings above black; forewing with a broad, orange-yellow spot of the posterior margin extended into area 4; hindwing above as in the ♂, but somewhat lighter. Wings beneath as in the ♂, but somewhat lighter, and the forewing at the posterior margin yellowish. Sierra Leone. — It presumably scarcely differs from *semirufa*.

**Ps. cellularis** Ky. (62 g). Both wings above orange-yellow, at the base and the hindwing almost everywhere strewn with black scales; forewing above with a black apical spot of 6 to 7 mm width, reaching vein 4 and being then continued to the anal angle as a narrow marginal band, sometimes the discal spots 4 to 6 (like in the figure) are separated from the apical spot; a black basal dot in the cell and 1 b, a large black discal dot and besides often also separate black submarginal dots in 2 and 3. Hindwing above with an irregular, black marginal band proximally indistinctly defined. Forewing beneath grey with an orange-yellow spot of the posterior margin, the grey colour speckled black with a black central dot and two rows of black spots before the apex. Hindwing beneath with a light yellowish-grey ground-colour, dusted a little black, 6 or 7 black dots in the basal half, 6 distinctly prominent, black submarginal dots in 1 c to 6, and at the margin between the veins with dark bows bordering on 5 or 6 yellowish marginal spots. The ♀ resembles the ♂, but it is of a somewhat paler colouring. Cameroon to the Ogowe River.

### 9. Genus: **Citrinophila** Ky.

In the structure of the veins this genus is very closely allied with *Pseuderesia*, and it only deviates by the marks mentioned in the review of the genus. From *Teriomima* it differs by the petioled veins 6 and 7



of the hindwing and by vein 7 or the forewing terminating into the apex or costal margin.

All the species are lemon-coloured — sulphureous-yellow — whitish-yellow with black marginal spots or a black marginal band, above, however, without spots of the ground-colour.

In the ♂♂ the costal margin of the forewing is above broad and jet-black, in the ♀♀ only speckled black or almost quite yellow.

#### Review of the Species.

A. The broad, black marginal band of the forewing above is distinctly indented on the inside, particularly in the areas 2 and 3. Large species, 35 to 45 mm. *C. erastus*.

B. The black marginal band of the forewing above is proximally almost totally-margined and almost uniformly sinuated.

α. The marginal band of the forewing above only reaches vein 2; both wings beneath with a black dot at the apex of the discal cell. *C. unipunctata*.

β. The marginal band of the forewing above reaches the anal angle.

\*. Wings beneath at the margin more or less dusted black, but without distinct marginal spots.

1. Marginal band of the hindwing above about 2 mm broad and distinctly eurved.

*C. similis*.

2. Marginal band of the hindwing above only 1 mm broad and almost straight, ending pointedly at vein 6. *C. pusio*.

\*\* . Wings beneath at the margin with distinct dark marginal spots or dots.

1. Forewing beneath with a dark spot at the cell-apex. Hindwing in the ♀ above with separate, dark marginal dots. *C. tenera*.

2. Forewing beneath without a spot at the cell-apex. Hindwing in the ♀ above with a very narrow black marginal band. *C. serena*.

*erastus*. **C. erastus** Hew. (♂ = erasmus Ky.) (62 h). Wings of a lemon-coloured (♂) or whitish-yellow (♀) ground-colour, beneath at the base more or less hued light orange-yellow. Both wings in the ♂ above with a black marginal band of 3 to 4 mm width, proximally dentate on the forewing, and broad, jet-black costal-marginal stripes of the forewing, covering at least the anterior longitudinal halves of the discal cells; in the ♀ the marginal band of the forewing above is shaped like in the ♂, that of the hindwing, however, broken up into round marginal spots, and the costal margin of the forewing is only narrowly dusted blackish-grey. On the under surface both wings have separate or almost separate black marginal spots instead of the marginal bands. Ashanti *flaveola*, to Angola. — ab. ♀ **flaveola** Ky. is the name of an aberration of the ♀, in which the marginal spots of the hindwing above are combined to a marginal band of 2 to 3 mm width. Gold Coast and Cameroon. KIRBY described the normal female form as the ♂ (!) of *flaveola*.

*unipunctata*. **C. unipunctata** Baker is unknown to me and may belong to *Teriomima*. The description runs thus: „♀. Both wings lemon-coloured; forewing with a broadly black apex, the black colour being proximally uniformly bent with a small indentation at vein 4, posteriorly reduced and ending at vein 2; hindwing with a fine, often interrupted, black marginal line. On the under surface both wings are lighter lemon-coloured with a black dot at the cell-apex; on the forewing the black marginal band faintly shows through; costal margin and border with fine black dots; hindwing with fine black dots at the ends of the veins. Expanse of wings: 34 mm.“ Congo District: Makala.

*tenera*. **C. tenera** Ky. (♂ = limbata Ky.) (62 g, h). Wings of a bright lemon-colour, beneath with black marginal spots and an irregular blackish spot at the apex of the discal cell on the forewing. ♂. Both wings above with a jet-black marginal band of 3 mm width, continued on the forewing at the costal margin to the base and almost entirely covering the discal cell. — ♀. Hindwing above only with separate marginal dots; forewing above with a crescentiform marginal band ending at the middle of the costal margin; basal half of the costal margin only narrowly dusted black. Cameroon to Gaboon.

*serena*. **C. serena** Ky. (62 h). The ♀ deviates from *tenera* ♀ only by the mark mentioned in the review and by very small marginal dots beneath, as well as by a narrower marginal band on the forewing above. ♂ unknown. Sierra Leone to Kuilu.

*similis*. **C. similis** Ky. (♂ = marginalis Ky.) (62 h). The ♂ scarcely deviates above from *tenera* ♂, but both wings are beneath dusted black at the margin, the forewing at the costal margin, the hindwing at the proximal margin, and there are no distinct marginal spots (only on the fringes there are black spots at the ends of the



veins); the forewing has no spot at the apex of the discal cell. The ♀ differs besides from *tenera* ♀ by a black marginal band of about 2 mm width on the hindwing above and a more equally broad marginal band on the forewing. Gold Coast.

**C. pusio** *Smith*. ♂. Wings yellow; costal margin of the forewing above only as far as the discal cell *pusio*. black; marginal band of the hindwing above only 1 mm broad, ending pointedly almost directly at veins 1 c and 6; wings beneath with a fine black marginal line and without marginal spots. ♀ unknown. Benin Coast: Warri.

### 10. Genus: **Teriomima** *Ky*.

This genus was established by KIRBY for *subpunctata*. Later on he combined several other species with it, which, however, did not correspond with it in the neurulation, and he mixed up species of *Citrinophila* with such of *Teriomima*. *Teriomima* deviates from *Citrinophila* by the veins 6 and 7 on the hindwing not being petioled. It is closely allied with *Liptena*, differing only by vein 6 of the forewing emerging from the footstalk of 7 to 9.

The *Teriomima* are small, delicately built, thinly winged, plainly marked imagines of a white or yellow ground-colour of both wings. They are probably confined to East and South Africa.

#### Review of the Species.

I. Hindwing beneath with small dark dots on a white or yellow ground. Forewing above with a triangular, black apical spot ending pointedly behind at vein 3 or 2. Hindwing above unicolorous or only with small black marginal dots.

α. Both wings of a white ground-colour.

\*. The dark apical spot on the forewing above distinctly longer at the border than at the costal margin. Under surface purely white with numerous, partly somewhat longish, dark dots.

*T. subpunctata*.

\*\*. The dark apical spot of the forewing above triangular, just as long at the costal margin as at the border. Under surface of the hindwing and apex of the forewing beneath hues yellowish with fewer dots.

*T. delicatula*.

β. Both wings of a yellow ground-colour. Hindwings beneath only with 6 to 8 dots, above one-coloured.

\*. Forewing with 4 dark dots one after the other at the costal margin; the apical spot on the inside not indented. Expanse of wings about 28 mm.

*T. puella*.

\*\*. Forewing at the costal margin only with 2 dark dots situate before the middle; the apical spot on the inside distinctly indented in area 5.

*T. puellaris*.

II. Hindwing beneath without dark dots.

A. Hindwing beneath light yellow, as far as the middle with numerous dark grey, fine transverse and paired streaks. Apex of forewing beneath not darkened.

*T. micra*.

B. Hindwing beneath, as well as the base and apex of the forewing beneath blackish-grey with numerous orange-yellow spots arranged in transverse rows, or reddish with light spots. Forewing above with a black apex and large, more or less connected spots at the costal margin.

α. Hindwing beneath light reddish-yellow with still lighter spots.

*T. pallida* ♀.

β. Hindwing beneath changing from blackish to dark grey with orange-yellow spots.

*T. pallida* ♂.

*T. aslauga*.

**T. subpunctata** *Ky*. (62 h). Wings above white; forewing with a black marginal band tapering off *subpunctata*. posteriorly and ending at vein 2; hindwing above only with small black dots at the ends of the veins. Wings beneath white; forewing with a grey diaphanous marginal band, two rows of black dots in it, and some black dots at the costal margin, in the cell and behind the cell in 4, 5 and 10. Hindwing beneath with numerous (more than 30) small dots, the submarginal ones of which are strigiform. German and British East Africa.

**T. delicatula** *Ky*. (62 h; apical spot of the forewing wrongly shaped) only deviates from *subpunctata* *delicatula*. by the marks mentioned in the review, and may be the ♀ of this species. German East Africa: Usagara.

**T. puella** *Ky*. (62 h, i). Both wings above and beneath of a yellow ground-colour; forewing above *puella*. with a black, posteriorly pointed marginal band ending at vein 2, and 4 small spots at the costal margin; beneath without a marginal band, but with a subapical transverse row of 5 black dots between the costal margin and

vein 4, and at the costal margin with the same spots as above. Hindwing above unmarked, beneath only with 8 black dots, one each in 2, 3, 4, 6, 7 and the cell and two in 1 c. It was described to originate from Gaboon; this statement, however, is probably wrong and the species in fact occurs in East Africa.

*puellaris*. **T. puellaris** Trim. only differs from *puella* by the marks mentioned above and is perhaps only a race of it. Manicaland.

*micra*. **T. micra** Smith is a small species of an expanse of only 21 mm, with an orange-yellow ground-colour. Hindwing above unmarked; forewing above with some indistinct, small dark spots at the costal margin, and a black marginal band reaching in one sex vein 3 and ending pointedly behind, whilst in the other sex (♀?) it only forms a small apical spot ending at vein 5. Forewing beneath only with some small, indistinct streaks at the costal margin and before the apex; hindwing beneath with numerous, fine, dark, paired transverse lines at the base and in the middle, and at the margin with a submarginal line formed of bows. British East Africa, on the Tana River.

*hildegarda*. **T. aslauga** is a variable species, varying according to the localities and seasons (?). The forms enumerated here were formerly considered as separate species; but as they are very closely allied, I take them to be forms of one species. — In **hildegarda** Ky. (= *freya* Smith & Ky.) (62 i) both wings above have a joint, black marginal band of 2 to 5 mm width; the ground-colour above is golden-yellow or orange-yellow, and the forewing at the costal margin broadly black or spotted black; beneath both wings are blackish with distinctly prominent orange-yellow spots and a curved spot of about 5 mm width on the posterior margin of the forewing. It is apparently the form of the rainy period and occurs from Angola to British East Africa. — **aslauga** Trim. (62 e) has above an orange-yellow ground-colour and deviates from *hildegarda* by the marginal band of the hindwing being absent (♀) or very narrow, and by the marginal band of the forewing ending pointedly behind and not reaching the anal angle in the ♀; under surface with a somewhat lighter ground-colour, otherwise as in *hildegarda*. Natal to British East Africa. — In **pallida** Trim. the ground-colour above is of a lighter yellow and the black markings are still more reduced; the marginal band of the hindwing is entirely absent and that of the forewing is narrower and shorter; on the hindwing beneath the ground-colour is in the ♂ lighter grey and in the ♀ light reddish-yellow with very indistinct spots. Mashuna Land to British East Africa.

## 11. Genus: **Larinopoda** Blr.

The *Larinopoda* are rather large (32 to 34 mm), broadly winged Liptenins, of a white ground-colour and with black markings. Legs ochreous-yellow with black-curved tarsi. The forewing above shows a black apical spot or a dark marginal band and beneath always a dark spot at the costal margin opposite the apex of the cell. The hindwing beneath exhibits a black dot in area 1 c near the rise of vein 2 and generally also such a dot in area 6. The margin of the forewing is convex, sometimes posteriorly convex. In the structure of the veins *Larinopoda* approximates the genus *Liptena*, but it is distinguished by the posterior angle of the discal cell being very much extended, whereby the apex of the cell is broadly and obliquely cut off.

The sexes are nearly alike; the ♀♀, however, are recognizable by the two penultimate ventral joints of the abdomen being very much swollen hemispherically.

### Review of the Species.

#### I. Hindwing beneath without a black dot in the discal cell.

A. Hindwing above unicolorously white without markings, beneath without a marginal band or marginal spots, but with a black basal dot in 1 c and at least one black submarginal dot (in area 6).

α. The black apical spot of the forewing above is 2 mm broad at most and is continued only to vein 3 as a black marginal line. *L. lircaea*.

β. The black apical spot of the forewing above is at least 5 to 6 mm broad and continued at least to vein 2 as a broad marginal band. *L. lagyra*.

B. Hindwing at least beneath with a dark marginal band or dark marginal spots. The apex and margin of the forewing above at least as far as vein 2 broadly black.

α. Hindwing beneath without a black inner-marginal band.

\*, Marginal band of the hindwing almost broken up into spots or proximally dentate. *L. hermansi*.



\*\* . Marginal band of the hindwing completely margined.

*L. aspidos.*

β. The broad black marginal band of the hindwing beneath is continued at the proximal margin as far as the base.

*L. latimarginata.*

II. The hindwing beneath with a black dot in the discal cell and besides with a basal dot in 1 c. The apex and margin of the forewing at least above broadly blackish.

α. Hindwing beneath purely white with three black dots (in 1 c, 6 and the cell) and at the margin more or less darkened.

*L. eurema.*

β. Hindwing beneath in the basal part with three black dots (in 1 c, 7 and the cell) and behind the middle with three brown nebulous bands united at the proximal margin; the first and second are broad, the third, however, narrow and composed of small crescents; the first usually only reaches vein 5 or 6, the two others reach the costal margin. The black submarginal dot in area 6 is absent.

*L. tera.*

**L. lircaea** Hew. (63 d). Wings white; forewing above with a narrow line at the costal margin and a small apical spot, 2 mm broad at most in the ♂, almost linear in the ♀, and reaching vein 3 at most, black; beneath as above, but without the apical spot and with an often rounded black spot at the middle of the costal margin. Hindwing above unmarked, beneath with only two black dots, one in 1 c and one in 6. Old Calabar to the Kuilu River.

**L. lagyra** only deviates from *lircaea* by the forewing showing above a black marginal band of at least 5 mm width. — In the principal form **lagyra** Hew. the costal-marginal stripe of the forewing above is narrow and behind the cell indistinct and the marginal band is posteriorly extended to a point in area 2. Old Calabar. — ab. **gyrala** Suff. (63 f). The costal-marginal band of the forewing is continued to the marginal band; the marginal band is 7 mm broad at the costal margin and ends obtusely at vein 2 or it reaches the posterior margin. Hindwing beneath beside the usual dots also with one small submarginal dot in 5 and 7. Cameroon. — **brenda** Ham. Druce only deviates by the hindwing showing beneath a complete row of dark submarginal spots, Benin. — **emilia** Suff. was described as a separate species as which it was considered yet in 1910 by HAM. Druce, but it seems to me to be merely a form of *lagyra* only differing by the marginal band of the forewing above being still broader (9 mm) at the costal margin and ending pointedly in 1 b. Cameroon to the Cassai River in the Congo District. — ab. **punctata** Ham. Druce deviates from *emilia* and *brenda* by the hindwing beneath showing a complete row of submarginal dots. Cameroon.

**L. hermansii** Auriv. only deviates from *lagyra* by the hindwing exhibiting on both sides 6 or 7 large, triangular, blackish marginal spots more or less contingent at the margin; hindwing beneath only in 6 and 7 with submarginal dots. Congo District near Bangasso on the Upper Ubangi. — ab. **spuma** Ham. Druce (63 f) differs from the principal form by the hindwing beneath showing, as in *brenda* and *punctata*, a complete row of black submarginal dots which, however, are united with the tips of the marginal spots. Cameroon.

**L. aspidos** Druce deviates from *hermansii*, as stated in the review of the species, by the marginal band of the hindwing being proximad completely margined. Togo to Lagos.

**L. latimarginata** Smith (63 f). Forewing on both sides with a narrow, black costal-marginal band reaching the marginal band; the latter is very broad, on both sides jet-black, and reaches the posterior margin. Hindwing on both sides with a completely margined black marginal band of 2 to 3 mm and beneath besides with a black inner-marginal stripe reaching the base; beneath with a black dot in 1 c; the submarginal dot in 6 is covered by the marginal band. Benin Coast: Warri.

**L. eurema** Plötz (63 f) deviates from all the preceding species by a black dot in the discal cell on the hindwing beneath. The black marginal band of the forewing is more or less broad and usually also beneath distinct, but there sometimes parted by a whitish submarginal band. Hindwing in the ♀ without a marginal band, in the ♂ with a narrow, dark marginal band, Sierra Leone to Ashanti.

**L. tera** Hew. (63 f). Forewing as in *eurema*. Hindwing above at the anal angle and at the margin more or less suffused with brownish, beneath with black basal dots in 1 c, 7 and the cell, and with 3 or 4 nebulous bands (comp. the review of the species); no submarginal dots. Cameroon to Angola and Uganda.

## 12. Genus: **Liptena** Hew.

In the structure of the veins *Liptena* corresponds with *Larinopoda*. The forewing has 12 veins, vein 6 rising separately from the apex of the cell. Veins 3 and 4 of the hindwing rise from the same place or on a

short footstalk, rarely somewhat separated; veins 6 and 7 not petioled. The discal cell is at the apex obliquely cut off and not extended at the posterior angle. The palpi are covered with appressed scales. Antennal club long-extended almost whorled.

The numerous species may be divided into 4 groups according to their colour and marking. Some of these groups have been regarded as genera. The morphological marks, however, do not stand the test, for which reason it is better to consider them as groups discernible by the colouring.

#### Review of the Groups of Species.

- A. Wings above with a white ground-colour changing to light ochreous-yellow, with or without black markings.
  - α. The wings are short and broad, always above with a white ground-colour. The costal margin, apex and margin of the forewing on both sides broadly black above always contingent and unspotted. Veins 3 and 4 of the hindwing almost invariably rising separately. First group.
  - β. Wings more oblong, above with a white or yellow ground-colour. Forewing above unmarked or with a large black apical spot rarely continued at the margin as far as the posterior margin: the costal margin is rarely and only above black. Hindwing beneath one-coloured or with several fine transverse lines or black dots. Veins 3 and 4 of the hindwing petioled or from the same place, rarely (as in *fatima*) separated at the rise. — *Parapontia Röber* (= *Leucolepis Karsch*). Second group.
- B. Wings above unicolorously black or black with orange-red spots or orange-yellow with black margins. Veins 3 and 4 of the hindwing from the same place. Hindwing never beneath with 6 or 7 dark transverse lines or transverse bands.
  - α. Wings beneath blackish with light spots or yellowish with black spots, above usually more or less orange-yellow or red, rarely unicolorously black. Vein 7 on the forewing terminates into the margin. Third group.
  - β. Wings above unicolorously black, beneath white with black markings. Vein 7 of the forewing terminates into the apex. — *Tetrarhanis Karsch*. Fourth group.

#### First Group of Species.

The species partly remind us of the *Larinopods*, partly strikingly of the *Pentila*-species of the *Tirza*-group. From the *Pentila*-species they are easily discernible by the absence of the precostal vein of the hindwing and by the much shorter discal cell. Sexes resembling each other.

#### Review of the Species.

- I. The black apex of the forewing beneath spotted light or with a white streak. Hindwing above without the black discal dot.
  - A. The black marginal band of the forewing reaches the posterior margin and is continued in the same width to the anal angle on the hindwing above. Hindwing beneath with a dark proximal margin.
    - α. On the forewing beneath the black costal margin is, behind the apex of the discal cell, sharply separated from the black apex by a projection of the white ground-colour.
      - \*. Hindwing beneath at the costal margin with black markings.
        - 1. Hindwing beneath of a yellowish ground-colour; the discal cell quite light or only at the apex with a black transverse streak. *L. libyssa*.
        - 2. Hindwing beneath with a white ground-colour; the discal cell at the base, in the middle and at the apex black. *L. hollandi*.
      - \*\* . Hindwing beneath at the costal margin in the areas 7 and 8 unicolorously white without spots. *L. nubifera*.
    - β. On the forewing beneath the black costal margin gradually passes over into the black apex without a deep indentation. Hindwing beneath with a very broad marginal band spotted white at the margin.



1. Hindwing beneath with two broad, black bands, one extending from the middle of the black proximal margin to the middle of the costal margin and the other one transversely from the apex of the cell to the black submarginal band and entirely covering area 6. The white ground-colour is thereby divided into two larger spots and a smaller one. *L. campimus*.

2. The white ground-colour of the hindwing beneath is not divided into separate spots.

a) Hindwing beneath at the apex of the discal cell with a large, black, very irregular spot reaching the costal margin, but neither the proximal nor distal margins.

*L. melandeta*.

b) Hindwing beneath at the apex of the discal cell with a large, rounded, jet-black, quite separate spot.

*L. lybia*.

B. The black marginal band of the forewing above grows narrower posteriorly and only reaches vein 2; on the hindwing above it is only represented by a very fine marginal line. Hindwing beneath white without a discal spot and with an unspotted, black marginal band of 3 mm width.

*L. simplicia*.

II. The black apex of the forewing as well as the costal margin and the border on both sides without light markings. Hindwing beneath at the proximal margin not black, on both sides with a black marginal band.

α. Hindwing only beneath with a black discal dot. Marginal band of the forewing posteriorly tapering, ending pointedly at vein 2 or 1.

*L. submacula*.

β. Marginal band of the forewing as far as the anal margin 3 to 4 mm broad and continued on the hindwing in the same width.

\*. Forewing on the transverse vein with a distinct, black spot united with the costal margin.

*L. confusa*.

\*\*. Forewing without a distinct spot on the transverse vein of the discal cell. *L. opaca*.

**L. libyssa** Hew. (= *margarita* Suff.) (63 g). Wings above white with a joint, unspotted, black marginal band and a black costal margin of the forewing. Forewing beneath white, the costal margin broadly black as far as the cell-apex, and with a black marginal band spotted yellow, of 7 mm width at the costal margin, but rapidly growing narrower posteriorly and ending pointedly at vein 2 or in 1 b. Hindwing beneath yellow, the proximal margin black as far as vein 1 c, with a black marginal band usually interrupted in area 5 and enclosing two white spots in 3 and 5 to 6, and with 4 black spots, two of which are near the black proximal margin (the first smaller one in 1 c near the base, the other larger one in 1 c and 2), whilst two are situated at the costal margin (the first being small and round in 7, the other being much larger and extending from the middle of the costal margin to the cell-apex and vein 5). Old Calabar to Angola. — **orientalis** Baker (= *confluens* Grünb.) (63 f) is the eastern form and deviates by the hindwing beneath showing at the end of the discal cell a black transverse streak connecting the large costal-marginal spot with the two inner-marginal spots; the costal-marginal spot is besides also connected with the marginal band in area 6; the black basal dot in area 7, however, is absent; the yellowish ground-colour is hereby divided into completely separate spots. Uganda.

**L. hollandi** Auriv. (63 g) resembles the form *orientalis* of the preceding species, but it deviates by the basal spot of the hindwing beneath in area 7 being large and united with the costal-marginal spot and sending a black transverse streak across the middle of the cell to the proximal margin; the ground-colour is almost white, and the marginal band has 4 or 5 white marginal spots. Congo District.

**L. campimus** Holl. (63 g). Wings above as in the preceding species; on the forewing beneath the black costal-marginal band without any border passes over into the marginal band which only encloses a white transverse streak at the apex. Hindwing beneath silvery white with a straight, black transverse band from the costal margin to the proximal margin right across the discal cell, and with a curved, black submarginal band, which are connected by a black longitudinal streak of area 6; the white ground-colour hereby forms three large areas, a marginal band and a longitudinal spot at the proximal margin. Cameroon to the Ogowe River.

**L. melandeta** Holl. Above white with broad, black margins as in the other species; forewing beneath as in *campimus*; hindwing beneath with a black proximal margin and submarginal band as in *campimus*, but otherwise only with an irregular, black costal-marginal spot reaching the cell-apex and sending a branch right across the middle of the cell. Ogowe River.

**L. lybia** Stgr. (63 g as *libya*) very much approximates *melandeta*, differing only by the hindwing beneath at the apex of the discal cell showing a rounded, separate, black spot not reaching the costal margin. Gabun.

**L. nubifera** Ham. Druce (63 g). Forewing above with a broad, black apex and margin; costal margin also as far as the cell blackish-brown; at the apex of the cell a black transverse spot being connected with the

black costal margin; beneath almost as above, but with lighter dark markings, a white line at the margin and a narrowed marginal band ending at vein 2. Hindwing above white with a broad brown marginal band and a small dark dot at the end of the cell; beneath for the greatest part covered with a light brown, with a white costal margin and white marginal spots pupilled brown; a dot at the base and one at the apex of the cell blackish. This deviating form seems to fit best into this group. Cameroon: Bitje.

*simplicia.* **L. simplicia** Möschl. Forewing above white, costal margin black as far as the discal cell, with a black marginal band ending pointedly behind at vein 2. Hindwing above white with a fine black marginal line. Forewing beneath as above, but with a white submarginal line in the black marginal band. Hindwing beneath white with an anteriorly tapering, black marginal band of 2 mm width. Ivory Coast to the Gold Coast.

*submacula.* **L. submacula** Lathy (62 a). Forewing on both sides with a black costal margin and a black, unmarked marginal band ending pointedly at vein 2 or 1. Hindwing on both sides with a dark submarginal band of 2 mm width, tapering off at both its ends, and beneath besides with a black discal dot. Nigeria: Anambara Creek.

*confusa.* **L. confusa** Auriv. Both wings above and beneath white with a black marginal band of 3 to 4 mm width and a black discal dot united on the forewing with the broad, black costal margin. Cameroon.

*opaca.* **L. opaca** Ky. (63 g) only differs from *confusa* by the absence of the discal dot of the forewing or by its being entirely covered by the broad costal margin. Hindwing in the chief form on both sides with a black discal dot. Cameroon to Gaboon. — ab. **immaculata** Grünb. Hindwing only beneath with a black discal dot. Spanish Guinea, and from the Kuilu River.

### Second Group of Species.

This group is very natural and consists of white or yellow species of a delicate structure, with thin wings, reminding us of the Teriomims. Hindwing beneath usually with a fine, black submarginal line between the veins 1 b and 6, and the forewing often with two similar lines between the apex and vein 4 or 3. The sexes are similarly coloured and marked.

### Review of the Species.

I. Both wings above and beneath with a black dot on the transverse vein of the discal cell. The veins 3 and 4 of the hindwing rising separately at a rather great distance from each other. Ground-colour of both wings white.

α. Forewing above at the costal margin at the apex and at the margin very broadly black. Hindwing beneath with 3 black basal dots (in 1 c, 7, and the cell). *L. perobscura.*

β. Forewing above only with a black apical spot of 4 mm width, ending at vein 4 or in area 3. Hindwing above only with a discal dot and beneath besides only with a very fine black marginal line; rarely with a basal dot in 1 c. *L. fatima.*

II. Both wings without a discal dot. Veins 3 and 4 of the hindwing rise from the same place or on a footstalk.

A. Hindwing on both sides one-coloured without markings or only with a fine, dark marginal line or rarely beneath with three indistinct, yellow transverse lines. Costal margin of the forewing above not or only narrowly black.

α. Both wings with a white ground-colour; forewing above with a large, black apical spot.

1. The apical spot of the forewing only reaches vein 4 or it forms at most also a short transverse streak in area 3. Hindwing beneath close in front of the margin with a fine, black line.

a) Wings on both sides purely white with white fringes, except at the apical spot, where the fringes are black. 33 to 35 mm. *L. alluaudi.*

b) Wings at the costal margin of the forewing and beneath at the margin distinctly hued yellow; fringes of the hindwings yellowish. 29 to 31 mm. *L. albicans.*

2. The apical spot of the forewing reaches vein 3 or even the centre of area 2, it is not posteriorly pointed and is narrowly continued at the costal margin to the base. Hindwing beneath without a black line at the margin. 24 to 27 mm. *L. decipiens.*

β. Both wings with a yellow ground-colour.

\*. Forewing above with a black apical spot. At least the hindwing beneath with a black line close at the margin.



1. The apical spot of the forewing is large, reaching posteriorly vein 2 and being continued at the costal margin as a narrow band as far as the base. *L. xanthostola.*
  2. The apical spot of the forewing is small and posteriorly bordered by the vein 5. *L. bolivari.*
- \*\*.
- Forewing without a black apical spot at the margin and at the apex only a little darker yellow. Both wings beneath without a black marginal line.
1. Hindwing beneath unmarked. Expanse of wings: 32 mm. *L. evanescens.*
  2. Hindwing beneath with three very indistinct, fine, yellowish, postmedian transverse lines. Expanse of wings: 27 to 28 mm. *L. immaculata.*
- B. Hindwing beneath with 3 to 8 dark transverse lines or with dark discal dots. Forewing always above with a dark apical spot.
- α. Hindwing beneath with dark transverse lines.
- \*. Hindwing beneath without black basal dots, sometimes with some separate spots owing to the transverse bands being broken up.
- §. Hindwing beneath beside the marginal line only with 4 yellowish-brown, level transverse lines. Ground-colour white. Forewing above with a large, black apical spot extended along the costal margin as far as the base and at the margin as far as vein 2. *L. subundularis.*
- §§. Hindwing beneath beside the marginal line with 6 or 7 dark transverse lines or transverse bands, of which, however, not all reach the costal margin.
- o. Both wings with a yellow ground-colour.
- †. Ground-colour of both wings light yellow.
1. The transverse lines on the hindwing beneath broad and thick, blackish-brown; the two or three first ones complete, the others in the areas 4 and 5 or only in 5 broadly interrupted. Apical spot on the forewing above small, only reaching vein 4. Costal margin above not or little darkened. *L. flavicans.*
  2. The transverse lines on the hindwing beneath narrow, yellowish-brown; the first six straight, the seventh curved, parallel to the margin; the third shortened, the others completely or almost reaching the costal margin. The black apical spot of the forewing large, posteriorly almost reaching vein 2. *L. undina.*
- ††. Ground-colour of both wings above orange-yellow or brownish-yellow.
1. Hindwing beneath with a light yellow ground-colour. *L. praestans.*
  2. Hindwing beneath with a grey ground-colour. *L. eukrines.*
- oo. Both wings above with a white ground-colour.
1. Hindwing beneath yellowish and only with 6 fine, undulate transverse lines. The apical spot on the forewing above reaches vein 4 at most, and is behind broadly and on the proximal side angularly indented. Costal margin above not or only very narrowly darkened. The first transverse line on the hindwing beneath very fine, often partly indistinct or broken up into spots. *L. undularis.*
  2. Hindwing beneath white with 7 almost entirely margined and distinctly prominent transverse lines. Forewing above at the costal margin broadly darkened; its apical spot large.
    - a) The apical spot of the forewing is posteriorly scarcely extended beyond vein 4. The transverse lines on the hindwing beneath fine and brown. *L. septistrigata.*
    - b) The apical spot of the forewing reaches vein 2. Transverse lines on the hindwing beneath thick and blackish. *L. ferrymani.*
- \*\*.
- Hindwing beneath straw-coloured with black basal dots in 1 c, 7 and the cell and behind the discal cell with three fine dentate transverse lines. *L. subpunctata.*
- β. Hindwing beneath without transverse lines, but with 7 black spots (3 in 1 c and one each in 2, 4, 6 and 7). Ground-colour of both wings yellow. *L. homeyeri.*

- perobscura*. **L. perobscura** Ham. Druce (63 g, h). Forewing above, entirely as in *L. libyssa*, black with a large, white spot of the posterior margin, reaching vein 5 and covering the posterior longitudinal half of the discal cell; beneath white with a small black discal dot; two curved transverse rows of dark dots behind the cell composed of 3 or 4 dots each in 4 to 6, and two fine, black antemarginal lines from the costal margin to vein 2. Hindwing white with a small black discal dot, besides above with two thick submarginal lines combined in 5 and 6, and beneath with three basal dots in 1 c, 7 and the cell, a curved transverse row of 6 discal dots in 1 c to 6 and with two fine black antemarginal lines. Cameroon: Bitje.
- fatima*. **L. fatima** Ky. (63 h). Both wings white, at the base yellowish with a black discal dot, and beneath close before the margin with a fine black marginal line which, however, ends on the forewing in area 3. Forewing above with a black apical spot 6 to 7 mm broad at the costal margin, ending transversely at vein 4 and proximally indented angularly. Cameroon to the Kuilu River.
- alluaudi*. **L. alluaudi** Mab. (= *augusta* Suff.) (63 h). We may only add to what has been said in the review, that the costal margin of the forewing is narrowly darkened at the base and that also the forewing beneath shows close before the margin a fine, black line reaching, however, vein 3 at most. Ivory Coast to Cameroon.
- albicans*. **L. albicans** Cator (63 h) only deviates from *alluaudi* by the marks stated in the review. Sierra Leone. „It generally flies high up between the trees“.
- decipiens*. **L. decipiens** Ky. (63 h). Wings white, beneath somewhat yellowish; hindwings unmarked; forewing above with a large black apical spot 6 mm broad at the costal margin, ending obtusely in area 2 and reaching at the costal margin the base as a narrow stripe, beneath with black fringes as far as vein 3 and with traces of a black submarginal line in 5 to 7. Cameroon to Congo.
- xanthostola*. **L. xanthostola** Holl. (= *xantha* Smith) (63 h). Both wings above and beneath yellow; apical spot of the forewing as in *decipiens*; hindwing on both sides at the anal angle with a black line close before the margin. Ogowe River to Uganda.
- bolivari*. **L. bolivari** Kheil is unknown to me, but according to the description it only deviates from *xanthostola* by the smaller apical spot of the forewing. Spanish Guinea.
- evanescens*. **L. evanescens** Ky. (62 i). Both wings light cream-coloured without markings; costal margin of the forewing narrowly blackish; fringes reddish. Cameroon.
- immaculata*. **L. immaculata** Stgr. scarcely differs from *evanescens* and only by the mark stated in the review. Ogowe.
- subundularis*. **L. subundularis** Stgr. (63 h). Wings white; forewing above with a large, black apical spot extending at the costal margin to the base and at the margin to vein 2, beneath at the apex with two brown, shortened submarginal lines and a black one close at the margin. Hindwing beneath with 4 fine, brown transverse lines, the first of which only extends from 1 c to the apex of the discal cell, and with a black line at the margin. Cameroon to Ogowe.
- flavicans*. **L. flavicans** Smith & Ky. (63 i). To the marks stated in the review we may only add that the forewing beneath shows a broad, black costal-marginal stripe ending transversely close behind the cell-apex, before the apex two broad, dark transverse bands between the costal margin and vein 5, as well as a black line close at the margin. Cameroon at the Barombi Station.
- praestans*. **L. praestans** Smith is smaller than *flavicans*, but larger than *undina*, between which species it also stands with respect to the marking on the hindwing beneath; the transverse lines are thicker and darker than in *undina*, but not so thick as in *flavicans*. Both wings above brownish-yellow; forewing with a broad black costal margin and apex, and narrowly black at the margin from vein 3 to the anal angle; hindwing with a dark marginal band of about 2 mm width, parted by a yellow line. Forewing beneath almost as above, but with light spots at the costal margin and light antemarginal transverse lines; the dark marginal band reaches vein 2 at most. Hindwing beneath with a light yellow ground-colour and 7 dark, thick transverse lines. Sierra Leone.
- undina*. **L. undina** Smith & Ky. (63 k) is above entirely similar to *L. xanthostola*; on the under surface the forewing has two curved, brown transverse lines before the apex, and the hindwing 7 yellowish-brown transverse lines (comp. the review). Kuilu River.
- eukrines*. **L. eukrines** Ham. Druce (63 i). Both wings above orange-yellow; forewing with a black costal-marginal stripe ending at the apex of the cell and entirely separated from the black apical spot by the ground-colour; the apical spot reaches behind only vein 4, where it ends broad; behind it only a fine marginal line; hindwing above without any other markings but a fine dark marginal line. Forewing beneath almost as above, differing



only by the apical spot being smaller, traversed by whitish and indistinctly defined. Hindwing beneath dark grey with 6 or 7 irregular transverse lines partly broken up into spots. North East Rhodesia.

**L. undularis** *Hew.* (63 i). As to this species I refer to the review. The wings, particularly the hindwings, *undularis*, are narrower than in the other species. Niger to Congo.

**L. septistrigata** (sic!) *Baker* is unknown to me, but according to the description it seems to stand between *undularis* and *ferrymani*. „Both wings white. Forewing with a broad dark costal margin and a very broad, dark, irregular apical spot commencing at the costal margin opposite the cell-apex and extending to the „third median vein“. Hindwing above only with a fine, dark marginal line from the anal angle to the „third median vein“. Forewing beneath with a narrow brown stripe along the costal margin of the discal cell and behind it with a short, curved brown transverse streak from the costal margin to the median vein; behind this transverse streak there is another curved brown transverse band ending near the margin at the median vein 3; nearer to the apex is a second, distinctly defined, dark brown, undulate, narrow, submarginal transverse line ending at median vein 2; close at the margin a black line interrupted by the veins. Hindwing beneath with 6 brown transverse lines, 4 of which extend from vein 1 b to the costal margin, the three first ones being parallel to each other and the three last ones, too, and with a curved and undulate submarginal line extending from the anal angle to the apex and being parallel to the fine marginal line; the third of the three first lines does not reach the costal margin, but it ends at the costal margin of the cell, and the sixth ends at the „fourth median vein“. Fringes white.“ Sierra Leone. *septistrigata*.

**L. ferrymani** *Smith & Ky.* (63 i). Wings white. Forewing above with a broad black costal-marginal stripe covering the base and the anterior longitudinal half of the cell, being expanded behind the cell and ending transversely, and with a black, somewhat irregular apical spot separated from the costal-marginal stripe by the white ground-colour and reaching vein 2 at the margin. Hindwing above white with a fine black line close at the margin and with transverse lines showing through from beneath. Forewing beneath almost as above, the marginal band, however, broken up into three subapical bands. Hindwing beneath with 7 distinctly prominent, thick, black transverse lines and a black marginal line; veins also black. This beautiful species is described according to specimens from Lokoja on the River Niger. *ferrymani*.

**L. subpunctata** *Baker* is described as follows: „Wings above white; forewing from the last quarter of the costal margin to vein 3 black, at the base a little tinted with an ochreous yellow, and at the first third of the costal margin dark grey; hindwing above at the margin with a band of fine, brown striae. Forewing beneath white with a dark transverse line at the apex of the cell; costal margin feebly speckled brown; apical part white with three fine, brown transverse lines, the innermost being dentate, curved, and reaching area 4, the second reaching vein 4, and the third extending close before the margin to vein 5; fringes as far as vein 3 black, behind it white. Hindwing beneath light straw-coloured with numerous, light brown markings; the base is very thinly, the proximal margin more densely speckled; one dark dot each in 1 c, 7 and the cell; a transverse streak at the cell-end; an indistinct, interrupted median transverse line; a postmedian, curved, dentate line is interrupted at the veins, and then a fine, undulate submarginal line; fringes white. Expanse of wings: 39 mm. Nigeria in the Province of Kabba. *subpunctata*.

**L. homeyeri** *Dew.* (63 i). Wings on both sides with a light ochreous-yellow ground-colour. Forewing above with a black costal-marginal stripe commencing at the base, ending transversely at the cell-apex and separated by the yellow ground-colour from the large, black apical spot reaching vein 3. Hindwing above unmarked (the spots from beneath distinctly showing through). On the forewing beneath the costal-marginal stripe is only represented by black basal spots of the areas 9 to 11, and the apical spot by a broad, black subapical band extended to vein 4 and by a fine black marginal line extending to vein 2. Hindwing beneath with three black dots in 1 c and one each in 1 b, 2, 4, 5, 7 and 8 (sometimes also with submarginal spots in 1 c to 5) and with a thick, black marginal line. Southern Congo District to Rhodesia. *homeyeri*.

### Third Group of Species.

The species of this group very much resemble the *Pseuderesia*, and have formerly also often been described as such. From the genuine *Pseuderesia*, however, they are always easily discernible by the vein 6 being separate in both wings. The ♀♀ often deviate from the ♂♂ by the reddish-yellow colour being more extensive particularly above.

### Review of the Species.

- I. Hindwing beneath at least beyond the middle orange-yellow or greyish-yellow, generally with black basal and discal dots.

A. Forewing on both sides (♀) or only beneath (♂) with a white subapical band. *L. subvariegata*.

B. Forewing without a white subapical band.

α. Smaller species, 28 to 30 mm. Hindwing above from the base to far beyond the middle and as far as the costal margin reddish-yellow. Forewing above with a very large, orange-yellow spot of the posterior margin. Both wings beneath before the margin with three dark transverse lines or transverse bands: a thick marginal line close before the margin; a dentate submarginal line and a post-discal line represented on the forewing by the broad subapical spot. These transverse lines are narrowly separated by the yellow ground-colour and on the forewing posteriorly shortened. Sexes similar.

\*. The black submarginal line beneath on both wings deeply dentated, in area 6 of the forewing as distinct as in the other areas. *L. similis*.

\*\* . The black submarginal line beneath is rather undulate than dentate, and in the area 6 of the forewing indistinct or absent. This area is thereby between the marginal line and the subapical band almost one-coloured yellow. *L. turbata*.

β. Larger species, 36 to 40 mm. ♂ hindwing above with a broad, reddish-yellow median band not reaching the costal margin; forewing above unicolorously black or only with indistinct, reddish discal spots in 2 to 4. ♀ unknown.

1. Forewing oblong, above with traces of yellowish discal spots in 2 to 4. Hindwing beneath with a blackish-grey marginal band of 3 mm width. *L. tulliana*.

2. Forewing short and broad, above one-coloured black. Hindwing beneath red-brown, without a dark marginal band, but with two transverse rows of black spots in the marginal half. *L. tullia*.

II. Hindwing beneath with a dark brown ground-colour merging into black.

A. Hindwing beneath with greyish-yellow merging into reddish spots and usually also with blackish spots. The spots are generally not distinctly prominent. Forewing above in the ♂♂ one-coloured black.

α. Hindwing beneath at the base of area 1 c with 1 or 2 red, usually black-pupilled spots. Forewing above in the ♀♀ behind the discal cell with a red longitudinal stripe not reaching the anal margin. Larger species, 35 to 40 mm.

1. Hindwing in both sexes above in the middle with a red transverse spot reaching neither the base nor the margins. *L. catalina*.

2. Hindwing in both sexes above one-coloured black or blackish-brown without markings. *L. o-rubrum*.

β. Hindwing beneath at the base of area 1 c without red, black-pupilled spots, usually with transverse rows of black and yellowish spots or indistinctly spotted yellowish. ♂. Hindwing above black with a broad, orange-yellow costal-marginal stripe. ♀. Forewing above with a large orange-yellow spot of the posterior margin, reaching vein 4 and then extending as a narrow transverse band almost to the costal margin. Hindwing above from the base to beyond the middle orange-yellow.

*L. ideoides*.

*L. oblonga*.

*L. infima*.

B. Hindwing beneath with numerous white or whitish-yellow, distinctly prominent spots on a black ground.

α. ♂. Hindwing above in the middle with an orange-red transverse band. ♀. The spot of the posterior margin on the forewing above reaches at least area 4.

1. ♂. Forewing above black without markings. ♀. The spot of the posterior margin in the forewing above almost reaches the costal margin. *L. helena*.

2. ♂. Forewing above with a small, reddish-yellow spot of the posterior margin, only reaching vein 2. ♀. The spot of the posterior margin of the forewing ends in area 4. *L. sauberi*.

β. ♂. Hindwing above black without markings. ♀. The spot of the posterior margin on the forewing above is absent or only reaches vein 4. *L. modesta*.

*L. despecta*.

*subvariegata*.

**L. subvariegata** Sm. & Ky. (62 e). ♂. Forewing above black without markings, beneath black with a broad, white subapical band in 4 to 6, three white spots at the costal margin, one orange-yellow longitudinal streak at the posterior margin of the discal cell, a fine transverse streak at the cell-end and two united, orange-yellow discal spots in 2 and 3. Hindwing above black with a reddish-yellow median transverse band of 4 to 5 mm width, extending from the proximal margin to vein 6 and being lighter, yellowish at the proximal margin;



beneath light orange-yellow with a black dot in 7 and with a black, in the areas 1 b, 3, 6 and 7 white-potted, in 4 and 5, however, almost interrupted marginal band only represented by 2 black marginal spots. ♀ unknown to me. Cameroon. — **aliquantum** Ham. Druce (64 a). The ♂ only deviates from the chief form by the hindwing *aliquantum*, beneath showing beside the basal dot in 7 also 2 in the cell and one in 1 c. The ♀ very much deviates from the ♂; forewing above black with a white subapical band and a very large, light brownish-yellow inner-marginal spot reaching the base, covering the whole discal cell, the greater part of the areas 1 a to 3 and the first third of 4 and 5; beneath as above, but with some white dots at the costal margin and border. Hindwing light brownish-yellow, above with a somewhat irregular, black marginal band of 2 to 3 mm width, beneath with a black dot in 1 c and 2 each in the cell and in 7, at the margin with separate or almost separate black spots at the ends of the veins, and in 1 b, 1 c, 2 and 7 with white submarginal spots bordered towards the base by thick, black bows. Congo District on the Upper Kassai River.

**L. tulliana** Smith (65 b). Forewing above blackish-brown with indistinct, anal, reddish discal spots *tulliana*, in 2 to 4, beneath with three black dots in the cell and one in 1 c and close behind the middle with a yellowish transverse band of about 3 mm width at the posterior margin, tapering off very much towards the costal margin. Hindwing above blackish with black basal dots and an orange-yellow median band almost entirely as in *subvariegata*, but distally almost rectilinearly defined, beneath greyish-yellow with a blackish-grey marginal band and 6 or 7 black dots in the basal part; at the proximal margin of the marginal band there are traces of black dots. Beni.

**L. tullia** Stgr. ♂. Forewing above black without markings, beneath dull black with an irregular, *tullia*, light reddish-brown, postmedian transverse band appearing narrow and faded in the upper part, in the lower part, however, broad and distinct; 2 or 3 black spots at the base; from the costal margin to vein 3 a posteriorly tapering, reddish-brown marginal band traversed by the black veins and a submarginal, black dentate line. Hindwing above black with a red-brown median transverse band of 5 to 6 mm width, extending from the proximal margin to vein 6 and forming also a smaller spot in the area 6; beneath light red-brown with 2 black basal dots each in 1 c, 7 and the cell, a similar dot at the cell-apex, a curved row of 7 black postmedian spots, and a faded black, antemarginal dentate line. Gabun.

**L. similis** Ky. (63 k). Forewing above black with a large, orange-yellow inner-marginal spot reaching *similis*, the base, of 10 mm width at the posterior margin, covering the whole discal cell or at least its posterior longitudinal half and reaching anteriorly vein 5; beneath almost similar, but with a lighter inner-marginal spot almost reaching the costal margin and separating the dark costal-marginal band from the apical spot; the apical part is marked as is stated in the review. Hindwing above orange-yellow with a broad, black marginal band, at the costal and proximal margins more or less darkened, beneath greyish-yellow with 9 or 10 separate, black dots in the basal part and the marginal band replaced by three arcuate lines. Cameroon.

**L. turbata** only deviates from *similis* by the marks mentioned in the review. — In the principal form *turbata*, **turbata** Ky. (63 k) the black marginal band on the forewing above is only about 1 mm broad in the areas 1 and 2, and the two proximal dark antemarginal lines on the hindwing beneath are incomplete or broken up into spots. Cameroon to the Kuilu River. — **intermedia** Grünb. only deviates by the black marginal band on the *intermedia*, forewing above being about 2 to 3 mm broad in the areas 1 and 2, the transverse lines on the hindwing beneath being coherent. Cameroon and Spanish Guinea.

**L. catalina** Smith & K. (63 k). ♂. Both wings above black; forewings without markings; hindwing *catalina*, with a short and narrow median stripe extending in the areas 4 and 5 from the apex of the cell towards the margin without reaching it, and being about 6 mm long. Wings beneath with a blackish ground-colour; forewing in the middle with a transverse row of reddish dots in 2 to 6, 9, of which those in 2 and 3 are larger, with whitish dots at the costal margin in 10 to 12 and two rows of indistinct, small, whitish antemarginal lunae. Hindwing beneath with 2 red spots in the cell and two in 1 c, of which at least the distal one is pupilled black, two antemarginal rows of indistinct, small whitish lunae and often also a similar one in the middle. The ♀ only deviates by the forewing showing on both sides a yellowish-red longitudinal stripe commencing pointedly at the base of area 1 b, extending beyond the middle of the areas 2 and 3, and forming also a small spot in 4; beneath it is even narrowly continued almost to the costal margin. Sierra Leone to Cameroon.

**L. o-rubrum** is distinguished by both wings of the ♂ and the hindwings of the ♀ being above one-coloured black. The under surface is marked almost as in *catalina*, in the ♂, however, without red discal spots of the forewings. — **o-rubrum** Holl. (= *daemon* Ham. Druce). Hindwing beneath at the base with 4 red spots, two *o-rubrum*, black-pupilled spots in 1 c, one in the cell and one at the cell-end. In the ♀ (64 a) the forewing, as in *catalina*-♀, shows a red longitudinal stripe which, however, is a little broader and on both sides connected with the costal margin by a transverse row of red spots. Cameroon to the Kassai River. — **tripunctata** Smith only deviates *tripunctata*, by the absence of the red spot in the discal cell on the hindwing beneath. Kuilu.



*ideoides*. **L. ideoides** Dew. (♀ = *girthi* Dew.) (65 b). The sexes are above quite different. In the ♂ the forewing above is one-coloured black without markings, and the hindwing is also black, but with a broad, reddish-yellow costal marginal stripe posteriorly reaching vein 4 and only separated from the distal margin by a narrow, black marginal line. In the ♀ the forewing shows above a large, reddish-yellow spot of the posterior margin of 5 mm width, reaching vein 4 and being then continued by a narrow transverse streak almost to the costal margin; the hindwing is above reddish-yellow with a black marginal band of about 3 mm width, extended at the proximal margin as far as the base. On the under surface the ♂ forewing is blackish-brown with some indistinct, reddish markings, in the ♀ almost as above, but with 3 reddish-yellow transverse streaks in the cell. Hindwing in both sexes beneath blackish-brown with numerous, indistinct, yellowish spots. Congo District near Mukenge. — The ♂ resembles that of *Eresina corgnetes* (64 b) and those of the *Pseuderesia*-species allied with *bicolor* (62 f) to such an extent that an accurate examination of the kindred relations of these species is very advisable.

*otlauga*. **L. otlauga** Smith (62 i). ♂ unknown. ♀ similar to that of *ideoides* (65 b), but larger (expanse of wings about 30 mm). The inner-marginal spot of the forewing anteriorly somewhat broader; the orange-yellow colour of the hindwing posteriorly uniformly rounded off, broadly filling up the base of the areas 1 c to 3. Hindwing beneath yellowish with 5 transverse rows or transverse bands of blackish-brown, square spots. Niger to Cameroon.

*infima*. **L. infima** Smith (64 a) is also known only in the ♀ and resembles *otlauga* (62 i) so much that it is probably only a variation of it. It deviates only by the hindwing above being thinly scaled blackish at the base as far as the apex of the cell and beneath showing a darker, more reddish ground-colour. Sierra Leone.

The following four species deviate from all the others by the numerous, distinctly prominent, white spots on the black hindwings beneath.

*helena*. **L. helena** Ham. Druce (62 c). ♂. Both wings above black, the forewing one-coloured without markings; the hindwing with a median transverse band of orange-yellow, only 2 mm broad and 4 to 5 mm long, reaching neither the proximal margin nor the costal margin. Wings beneath black with numerous, white (or on the forewing partly reddish) dots or spots partly arranged in transverse rows. The ♀ above almost like the ♀♀ of *ideoides* (65 b) and *otlauga* (62 i); forewing above black with a yellow inner-marginal spot almost reaching the costal margin, of 10 mm width at the proximal margin, almost reaching the base and being very narrow in the areas 4 to and 9; hindwing above as far as beyond the middle yellow with two black transverse streaks in the discal cell and a black marginal band of 4 mm width; wings beneath almost as in the ♂, the forewing, however, with a large, light yellow inner-marginal spot reaching vein 4, and then continued by small, white spots to the costal margin, the white or faintly yellowish spots of the hindwing larger than in the ♂, particularly the spot in the middle. Ashanti to Cameroon.

*sauberi*. **L. sauberi** A. Schultze (65 c) is unknown to me. The description says: „♂. Upper surface sooty black; on the forewing a reddish-yellow, anteriorly narrowing spot of the posterior margin in 1 a to 2, of 7 mm width at the posterior margin, of  $2\frac{1}{4}$  mm width at the vein; on the hindwing the transverse band is much more extensive than in *helena*; in the areas 1 and 2, where it is striated black, it reaches the base, and completely also fills up the base of area 3, proceeding then with a small spot into the apex of the discal cell and forming another spot in area 6; distally it is radiantly extended, above all distinctly so in the areas 3 to 5; besides there are in the discal cell two more reddish-yellow, faintly striated spots. On the black under surface *sauberi*-♂ in the arrangement and size of the yellowish-white spots exactly harmonizes with *helena*-♂, but on the forewing there is instead of the red spots in area 2 and 3 a reddish-yellow, anteriorly very much narrowed spot of the posterior margin in the areas 1 a to 4, which is anteriorly continued to a distinct bow by the white discal dots. The ♀ differs above from *helena*-♀ by the reddish-yellow spot of the posterior margin on the forewing in area 1 a not reaching the base and terminating in area 4, where it forms a small spot; on the under surface which otherwise harmonizes with that of *helena*-♀, the yellowish-white spots are somewhat smaller.“ South Cameroon; it flies round the apices of the tendrils of Maranthaceae.

*modesta*. **L. modesta** Ky. (62 e). ♂. Both wings above one-coloured black without markings; under surface black with white dots arranged almost as in *helena*-♂; the discal dots of the areas 1 b to 3 of the forewing, however, are entirely absent. The ♀ differs from *helena*-♀ by the spot of the posterior margin of the forewing reaching only vein 4. Cameroon to the Kuilu.

*despecta*. **L. despecta** Holl. is unknown to me, but according to the description it approximates *modesta*. „♂. Above uniformly dark reddish black; beneath dull blackish-grey, at the base of the forewing darker; both wings with marginal, submarginal and discal transverse rows of sagittiform, white spots; the hindwing besides with some small, indistinct markings at or in the cell. The ♀ resembles the ♂, except the apex of the forewing being less distinct, its margin more rounded, and the colour of the upper surface light reddish-brown. On the Upper Ogowe River.



## Fourth Group of Species.

This group differs from others by vein 7 of the forewing terminating into the apex, this being a very rare ratio in the Liptenins. Both wings above unicolorously black or blackish without markings or only with a diaphanous black discal dot, beneath white or whitish with a distinctly prominent black dot at the apex of the discal cell and at least with traces of a fine discal line and a submarginal line.

**L. diversa** Baker (63 k). Larger, 27 to 34 mm; the forewing beneath at the costal margin and at the apex watered with brown striae; hindwing beneath over the whole surface thinly strewn with minute dots and striae; both wings beneath with a black line close in front of the margin, and the forewing besides with dark discal dots in 2 to 6; the hindwing with a black dot in c. Perhaps only a race of the following. Sierra Leone.

**L. ilma** is smaller, 18 to 26 mm, and has a pure under surface not speckled or only so at the costal margin. — **ilma** Hew. (65 c). Both wings beneath with a large, blackish-grey apical spot which is larger on the forewing and reaches at least the middle between the apex and the discal dot. Congo District to Angola and Uganda. — In **simplex** Auriv. (64 a) this spot is absent or it is on the forewing only represented by a thick submarginal line; both wings with a dark postdiscal line formed by fine streaks, reaching, however, posteriorly only vein 4 on the forewing. Togo to Cameroon.

13. Genus: **Micropentila** Auriv.

The veins are arranged exactly as in *Liptena*. The palpi, however, are shorter and their middle joint is beneath clad with projecting, bristly hair or scales. The species are all small, of a black or blackish ground-colour and with white or yellowish markings.

## Review of the Species.

## I. The wings beneath with several light spots at the base and margin.

A. Fringes of the wings spotted white. Hindwing above one-coloured blackish-brown or only with 1 to 4 small, white or whitish spots; forewing above blackish-brown with 1 to 5 small whitish spots.

α. Forewing above with 2 antemedian spots (in 1 b and the discal cell), and three postmedian ones (in 3, 6 and 9). Larger species, 22 to 32 mm.

\*. Hindwing above one-coloured without markings.

*M. adelgunda*.

\*\*. Hindwing above with 4 whitish spots.

*M. dorothea*.

β. Forewing above only with 2 or 3 light postmedian spots (in 3, 5 and 9). Smaller species, 17 to 20 mm. Hindwing above one-coloured or only with one white dot.

*M. adelgitha*.

## B. Fringes of wings one-coloured without spots.

α. Hindwing above only with some small, yellowish spots forming a curved transverse row. Forewing above with a postmedian, narrow, irregularly curved, yellow transverse band extending from the costal margin to vein 2.

*M. fuscula*.

β. Hindwing above with an orange-yellow median band distinctly expanded in the ♂ at the proximal margin and not reaching the costal margin.

\*. Forewing above in the ♂ with a yellow, postdiscal transverse stripe.

*M. mabangi*.

\*\*. Forewing above in the ♂ one-coloured blackish without markings.

*M. alberta*.

*M. cingulum*.

## II. Wings beneath without light spots in the basal part and also without spots at the margin, or only with a whitish proximal border of the black marginal dots. Hindwing above at least at the proximal margin with a yellow median band.

α. Both wings beneath close in front of the margin with round, black dots bordered with white and with a common, whitish, postdiscal transverse band.

*M. brunnea*.

β. Wings beneath without black dots at the margin. Forewing on both sides one-coloured black without markings,

*M. triangularis*.

- adelgunda*. **M. adelgunda** Stgr. (62 c). Wings above blackish-brown; forewing with 5 yellowish-white dots or spots, one in the cell, one in 1 b before the middle, one in the middle of area 3, and two near the costal margin in 6 and 7; hindwing unmarked; fringes between the ends of the veins white; both wings beneath black with numerous white spots, 2 or 3 of which are in the discal cell and two curved transverse rows before the margin. Forewing at the posterior margin whitish-grey. Cameroon to the Ogowe River.
- dorothea*. **M. dorothea** Baker very much resembles *adelgunda* and, according to the description, it seems only to differ by the hindwing above showing 4 light spots, one in the base of area 3, one on each side of vein 2, one in 1 b, and one at the costal margin near the apex. Expanse of wings: 32 mm. Sierra Leone.
- adelgitha*. **M. adelgitha** Hew. (64 a, as *adelgitta*) is smaller than *adelgunda*, but beneath quite similarly marked and above only deviating by the forewing being unmarked in the basal half and showing 2 or 3 postdiscal white spots arranged in an arcuate line (in [3] 5 and 9). Hindwing above with or without a white dot in area 4. Cameroon to Gabun.
- fuscula*. **M. fuscula** Sm. Wings above blackish-grey with light yellowish markings; forewing in the basal half with a dot in 1 b, one in the cell, and 3 at the costal margin, and with a postdiscal, irregular transverse band curved almost in the shape of an S, beginning at the costal margin, ending behind at vein 2 and being a little thickened in area 3; hindwing with a curved transverse row of small streaks or dots in 1 a to 4. Wings beneath blackish and, as in the preceding species with numerous white, or light yellow spots partly combined to transverse bands. Benin Coast near Warri.
- mabangi*. **M. mabangi** Baker is described as follows: „Head, thorax, and abdomen above blackish; abdomen beneath light brown; palpi above blackish, beneath and laterally creamy; legs black with light rings. Forewing blackish-brown with a postmedian, indistinct, angled, yellowish stripe; hindwing blackish-brown with a broad, orange, median transverse band from the proximal margin to vein 7. Both wings beneath blackish-grey with yellowish spots and streaks; forewing with two transverse streaks in the cell and a larger one at the cell-end; from the light yellowish posterior margin extends, behind the middle towards the costal margin, an orange-yellow transverse stripe interrupted at vein 6 and narrowed towards the costal margin; a fine, interrupted, light submarginal line and a thicker antemarginal line are connected by a spot in area 5. Hindwing beneath with 2 basal dots, a transverse row of 3 dots and 2 or 3 dots, of which that at the costal margin is much larger than the others; costal margin as far as this spot broadly ochreous-yellow; a broad, irregular transverse band somewhat behind the middle from the costal margin to the proximal margin, and two submarginal lines. Expanse of wings: 28 mm. Sierra Leone.
- alberta*. **M. alberta** Stgr. (62 e). ♂. Forewing above one-coloured black without markings; hindwing above black with an orange-yellow transverse band extending from the proximal margin to vein 6 and being broader towards the proximal margin. Wings beneath blackish with small, white spots at the base, two rows of such spots at the margin and a median transverse band which is narrow, white and curved on the forewing thick and yellowish on the hindwing. The ♀ deviates by both wings above showing a complete, yellow transverse band of 1 to 2 mm width and several yellowish dots in the basal part. On the under surface the median band is broader and yellowish. Ogowe River.
- cingulum*. **M. cingulum** Ham. Druce „is closely allied with *alberta* and not differing above; beneath, however, it differs by the hindwing showing instead of the fine line a submarginal row of small lunae.“ Cameroon: Bitje.
- brunnea*. **M. brunnea** Ky. (64 b). Both wings above blackish with an indistinct, common, grey transverse band being yellowish and somewhat expanded at the proximal margin of the hindwing. Wings beneath blackish with a narrow, distinct, white transverse band a little behind the middle, and close in front of the margin with a row of black dots bordered with white; basal part without spots. West Africa.
- triangularis*. **M. triangularis** Auriv. (64 b). ♂. Forewing on both sides one-coloured black without markings. Hindwing black above with an orange-yellow transverse band extending from the proximal margin to vein 5 and being very much expanded at the proximal margin; beneath only with an almost equally broad, light yellow transverse band reaching the costal margin. Cameroon.

#### 14. Genus: **Eresinopsides** Strand.

We may add to what has been said in the review of the genus: „palpi hairy and subsetous, projecting far beyond the forehead; the terminal joint long, thin, subcylindrical“. Vein 6 of the forewing almost rises from the middle of the footstalk of 8 and 9 (7 being absent); the veins 10 and 11 rise separately from the anterior margin of the cell.

- bichroma*. **E. bichroma** Strand (64 b). Black, above with a bright, orange-yellow anal-marginal part of the forewing and costal-marginal part of the hindwing; these two spots together form an irregularly bordered, transversely oval area of 6 mm length and 8 mm width, 2 to 3 mm distant from the base; at the posterior margin of the forewing it is 1 to 2 mm distant from the anal angle, and at the anterior apex reaching to vein 5 it



is 5 mm distant from the apex of the wing; this anterior apex is defined as a trapezoidal or almost rectangular spot which, however, coheres with the other yellow area; posteriorly the latter area continuously extends to the median vein of the hindwing; farther behind there are single, yellow dots at the veins; fringes black with 5 yellow spots on the hindwings and 5 or 6 much smaller ones on the forewings; at the costal margin of the forewing 1 or 2 yellow punctiform spots. Wings beneath orange-yellow; forewing with 6 or 7 black, oblique, irregular costal-marginal stripes, the distal one of which is posteriorly prolonged as narrow as a line, whilst the penultimate reaches vein 3 and is twice as long and broader than the preceding stripes; margin narrowly black. Hindwing beneath with a submarginal line formed of narrow, coherent moon-spots, a submedian transverse band being outside in the middle strongly expanded, and 2 or 3 narrower bands in the basal half black; the black colour, however, strongly mixed with leaden-grey scales. Expanse of wings: 25 mm. Usambara.

### 15. Genus: **Eresina** *Auriv.*

Antennae moderately long with a distinct, oval, compressed club. Palpi scaled and bristly-haired, projecting beyond the forehead. Legs short; posterior tibiae faintly curved, thickened and somewhat compressed. Forewing only with 11 veins (vein 7 is absent); vein 6 rises behind the middle of the long footstalk of 8 and 9, and vein 10 either from the same footstalk near the cell-apex or from this apex itself, and vein 11 from the costal margin of the cell. Veins 6 and 7 of the hindwing on a long footstalk.

The species are small and resemble either *Pseuderesia*-or *Liptena*-species.

#### Review of the Species.

I. Wings undulately margined, of a black ground-colour and with an orange-yellow costal-marginal stripe on the hindwing above. *E. corynetes.*

II. Wings completely margined, of an orange-yellow ground-colour. *E. gerda.*

**E. corynetes** *Smith & Ky.* (64 b). ♂. Forewing above black without markings, beneath black, at the margin tinted yellowish with black moon-spots close in front of the margin. Hindwing above black with an orange-yellow costal-marginal stripe covering the anterior half of the discal cell and almost reaching vein 4, but ending before the apex of the wing; beneath blackish-grey at the base and in the middle spotted ferruginous, and at the margin with two transverse lines of black moon-spots. The ♀ differs by the forewing showing an orange-yellow discal band being broad at the posterior margin, anteriorly narrowed and ending at vein 6. Niger to Cameroon.

**E. gerda** *Ky.* (62 i). Wings above orange-yellow, at the margin somewhat darker; forewing with a small, black apical spot reaching vein 4, a small, dark median dot and small discal dots in 4, 5 and 9. Wings beneath brownish-yellow, at the posterior margin of the forewing lighter, with two, dark antemarginal lines formed of small lunae, and some dark discal dots and striae. Cameroon. — **unicolor** *Auriv.* only deviates by the dark apical spot on the forewing above being entirely or almost entirely absent, and the hindwing being much lighter, sulphureous-yellow beneath. Kuilu River.

### 16. Genus: **Argyrocheila** *Stgr.*

This genus is founded upon one of the most delicate and most peculiar day-butterflies. In the structure of the veins it only differs from *Eresina* by vein 8 of the forewing being present, though extremely small. The forewing is strongly lobated at the ends of the veins 4 to 7, and the margin is most prominent at vein 4. Hindwings faintly undulately margined.

**A. undifera** *Stgr.* (64 b). Wings semi-transparent, white with some small brown dots or striae at the margin and costal margin of the forewing, and with a dark dot in area 4 of the hindwing; fringes speckled brown. Sierra Leone to the Ogowe River.

17. Genus: **Aslauga** Ky.

In the structure of the veins *Aslauga* almost entirely corresponds with *Liptena* and it chiefly only deviates by the uncommon shape of the wings. The forewing is behind the apex at the end of vein 6 emarginated or straight, and projects then convexly at the veins 3 and 4; the apex is thereby sharper and more distinct than in the *Liptena*-species. The hindwing is broad and deeply excised at the proximal margin between the ends of veins 1 a and 1 b, and the anal angle is distinctly prominent. Palpi quite smooth and with appressed scales, slantingly projected, with a rather long terminal joint. Antennae short and stout with a round club and short stout joints which are not or scarcely longer than they are broad. The forefeet of the ♂ are completely jointed and have two claws; thus they scarcely deviate from those of the ♀. It is therefore often difficult to discern the ♂♂ from the ♀♀. Larva longish, beneath flat, above convex and covered with a solid, shield-like skin. According to the interesting discoveries by W. A. LAMBORN published of late, it lives on shield-lice.

## Review of the Species.

## I. Legs one-coloured, grey merging into brown.

A. Wings on both sides with an ochreous-yellow ground-colour, above at the costal margin and at the margin broadly blackish-brown. *A. vininga*-♀.

B. Wings beneath with a grey, violettish-brown ground-colour, above blackish, with a more or less intense blue reflection or suffused with violet.

α. Wings beneath without a dark transverse line.

\*. The anal angle of the hindwing is almost rectangular and does not project as a small tail.

1. Margin of the forewing between the apex and vein 4 distinctly concave; margin of the hindwing angularly projecting between the veins 3 and 4. *A. vininga*-♂.

2. Margin of the forewing between the apex and vein 4 quite straight; margin of the hindwing uniformly curved, not angularly projecting in the middle. *A. lamborni*.

\*\* Hindwing at the anal angle with a distinctly prominent lobe or small tail.

1. Both wings beneath in the middle scaled blackish, and with a yellowish transverse spot at the apex of the discal cell. *A. leonae*.

2. Wings beneath at the base and at the margin scaled darker without a light spot at the end of the discal cell. *A. kallimoides*.  
*A. cephren*.

β. Both wings beneath with a dark straight transverse line extending in the forewing from the costal margin near the apex to the middle of vein 2, and in the hindwing from the apex of vein 8 to the middle of the proximal margin. *A. bella*.

*A. purpurascens*.

## II. Legs brown with white spots. At least the forewing with a white dot or spot at the apex of the discal cell. Large species, 53 to 64 mm.

α. Forewing above from the base to beyond the cell light blue. *A. aura*.

β. Both wings above uniformly dark brown without markings. *A. pandora*.

*vininga*. **A. vininga** Hew. (♀ = *marginata* Plötz). ♂ wings above indigo-blue; the forewing at the costal margin and at the margin broadly black; beneath greyish-brown, towards the margin lighter. In the ♀ (64 b) the wings are on both sides ochreous-yellow, above with a blackish-brown marginal band of about 3 mm width and a similarly coloured costal-marginal band reaching the anterior margin of the discal cell, beneath without markings, only at the margin a little brownish. Sierra Leone to Ogowe.

*lamborni*. **A. lamborni** Baker (64 b) is very much like *A. vininga*, but it has a different shape of the wings (see above) and above a greenish-blue reflection reaching the anal angle on the forewing; under surface grey, beyond the middle densely strewn with brown scales. In the ♀ the wings above are monotonously dark brown. Nigeria to Cameroon. — The larva lives on shield-lice, being itself shield-shaped and above covered by a tough, almost unjointed, warty skin; the head is small and can be extended and retracted beneath the small shield like in a tortoise.



**A. leonae** *n. sp.* (64 c). This species also approximates the two preceding species, but in the ♂ it *leonae*. has a small, distinct tail at the anal angle of the hindwing, and the margin of the hindwing is distinctly angled or almost lobated between the veins 3 and 4. Both wings above with a steel-blue reflection, the forewing at the apex and the hindwing at the costal margin broadly black or blackish-brown, margin of the forewing behind the apex distinctly emarginated; beneath lustrous dark grey, in the middle broadly scaled blackish with a small, yellowish spot at the end of the discal cell. The ♀ very much approaches that of *vininga*, but it has almost rounded hindwings; the anterior side is loam-coloured yellow without a black margin. Sierra Leone.

**A. kallimoides** *A. Schultze* (65 c). Upper surface monotonously brownish greyish-black (the veins *kallimoides*. and a narrow margin darker) with a distinct indigo-blue reflection merging into a greenish towards the base; under surface brownish violettish-grey, towards the base and margin cloudily darkened by small brown scales; a very narrow marginal line is brown; before this line a greenish-grey marginal band of 1 mm width, common both to the fore- and hindwing, proximally indistinctly defined, strongly expanded on the forewing from area 4 to the costal margin, whilst on the hindwing it grows indistinct or disappears in area 6; fringes above and beneath buff. Sexes similarly coloured. South East Cameroon near Molundu, where the species was dashing in the sunshine round low shrubs in an open space of the primeval forest, on which it sometimes settled down for a short rest with its wings half opened.

**A. cephren** *Ham. Druce* is unknown to me, but according to the description, it seems scarcely to *cephren*. differ from *kallimoides*. Above: uniformly dark purple; the costal margin of the hindwing broadly brown; both wings with a dark brown marginal line; fringes of both wings ferruginous. Under surface light yellowish brown without distinct markings and particularly at the base and margin densely covered with red-brown scales; the lower half of the proximal margin of the hindwing is very concave, and the anal angle is extended into a distinct lobe turned inwards. Expanse of wings: 42 mm.

**A. bella** *Baker* is known only in the female sex and is described as follows: Both wings above grey *bella*. with a faint light blue tint; forewing dark brownish-grey at the base with a bluish hue extending almost to the apex of the cell and to the middle of the posterior margin; an anal, whitish spot parted by the black transverse vein is at the end of the discal cell; behind this spot there is as far as the posterior margin a bluish-grey dusting following upon the blue basal area; hindwing light brownish-grey, in the discal cell and before the middle of the wing dusted with blue; fringes of the hindwings white. Both wings beneath yellowish white, thinly dusted with chocolate-brown scales; forewing with a brown apical spot and a brown, slanting line extending from the apex to vein 2, being partly double and on the hindwing continued from the middle of the costal margin to the proximal margin. Expanse of wings: 44 mm. Nigeria, near Lagos.

**A. purpurascens** *Holl.* (64 c) is distinguished by the dark transverse line beneath mentioned in the *purpurascens*. review. In the ♀ of the type the wings above are violettish-or bluish-grey, at the base faintly suffused with a light blue; under surface light grey, strewn with some small, brown scales. Ogowe River to Cavirondo. — **marshalli** *Bull.* (64 c) is above somewhat darker and has a more or less incomplete or indistinct transverse *marshalli*. line beneath. Mashuna District.

**A. aura** *Ham. Druce* is only known in the female and is described as follows: Forewing above blackish- *aura*. brown, at the base of the costal margin grey; the basal part as far as beyond the cell light blue with a whitish spot parted by a black transverse streak, at the end of the cell; hindwing dark grey and suffused with blue almost to the anal angle; the latter is strongly extended; fringes of the forewing brown, the hindwing white. Beneath both wings are creamy and densely speckled with small brown and black scales; the posterior margin of the forewing as far as vein 2 whitish; margin of the forewing in the apical half red-brown with two grey and black angular markings near the apex; a small, white dot at the cell-apex and an indistinct dark band from the apex to the middle of vein 2. Hindwing beneath with a brown transverse line from the middle of the costal margin to the middle of the proximal margin; palpi creamy with a brown terminal joint. Expanse of wings: 53 mm. Cameroon: Bitje.

**A. pandora** *Ham. Druce* is a very large species of an expanse of 64 mm, of which only the ♀ is *pandora*. known hitherto. Both wings above monotonously dark brown without markings; fringes of both wings and the costal margin of the forewing very narrowly red-brown. Under surface light brown, densely speckled with small, dark brown scales, and with a common, rather narrow, brown transverse band extending from the apex of the forewing to the middle of the proximal margin of the hindwing; the posterior margin of the forewing is coloured light; fringes brown; both wings with a white dot at the cell-apex. Palpi light yellow with brown scales and a brown terminal joint. The apex of the forewing is extended into a sharp apex; the anal angle of the hindwing is extended in the shape of a sickle. Vein 6 of the forewing is separated from the cell-apex by a distinct upper discocellular vein. Cameroon and Unyoro in the Budongo Forest.

## 18. Genus: **Euliphyra** *Holl.*

Eyes bare. Antennal club distinctly defined, round. The forewing with 12 veins: vein 6 from the footstalk of 7 to 9; vein 7 terminates into the margin near the apex or almost into the apex, 10 and 11 separate from the anterior margin of the cell; vein 5 rises somewhat nearer at 6 than at 4. Hindwing with 8 veins:



vein 2 rises uncommonly near the posterior angle of the cell, 3 and 4 shortly combined from the anal angle, 6 and 7 separated. Palpi rather short with a short, lowered terminal joint.

Mr. W. A. LAMBORN has made the interesting discovery that the larvae of *E. mirifica* live in the nest of an African ant, *Oecophylla smaragdina* var. *longinoda*, where they also pupate. They are longish shield-shaped and above covered by a thick, leather-like skin by which they are protected against the attacks of the ants.

#### Review of the Species.

- I. Hindwing with a uniformly curved margin and a somewhat extended anal angle. Margin of the forewing angled at vein 4. Both wings above dark brown with a large, whitish spot of the posterior margin in 1 a and 1 b of the forewing, beneath with violettish-grey ground-colour merging into brown, and whitish-yellow and blackish-brown markings. *E. mirifica* ♂.
- II. Margin of the hindwing in the middle distinctly angled. Hindwing beneath with a white ground-colour and ring-shaped markings.
  - α. Margin of the hindwing projecting the most at the end of vein 2, angled or with a short tail. Wings above one-coloured reddish-brown.
  - β. Margin of the hindwing at the end of vein 3 angled.
    - \*. The wings above brown, towards the apex and margin of the forewing blackish. The forewing above with a large, whitish spot covering the apex of the discal cell, the base of the areas 2 to 5 and the middle of the area 1 b. *E. mirifica* ♀.
    - \*\*. Wings above white with a blackish-brown marginal band of 4 to 5 mm width, and a similarly coloured costal margin of the forewing. *E. leucyania* ♀.

*mirifica*.

**E. mirifica** Holl. (♀ = *hewitsoni* Auriv.) (65 c). ♂. Wings above dark brown; hindwing without markings; forewing with a large, whitish, almost square spot of the posterior margin, reaching vein 2; under surface reddish-brown, at the margin and base of the hindwing lighter, violettish-grey; forewing as above with a light spot of the posterior margin, besides with some brown streaks and a dark submarginal line; hindwing at the middle of the proximal margin in 1 b and 1 c with an irregular, white spot surrounded by black, anteriorly continued by a dark brown transverse line; one or two dark transverse streaks at the costal margin, and a thick, blackish-brown submarginal line anteriorly and posteriorly pointed. The ♀ has above a much larger white spot of the posterior margin on the forewing, reaching vein 6 and covering the apex of the discal cell; the under surface is marked almost as in the ♂, but much lighter, for the greatest part whitish. The larva discovered by LAMBORN lives in the nests of *Oecophylla smaragdina*, resembles the larva of the allied Asiatic and Australian genus *Liphyra* likewise living in *Oecophylla*, and belongs to the most peculiar larvae of the day-butterflies known hitherto. The under surface of the larva is flat and entirely covered by the shield-like expanded skin of the upper surface, the sharp margin of the shield covered with small, chitinized cones everywhere closely joined to the base. Hereby the soft under surface is well protected against the attacks of the ants. The upper surface of the shield is covered with a compact mass of star-shaped, chitinized, small tubercles, and exhibits besides on the dark areas chitinized, erect, pencil-shaped formations. The upper surface is brownish-yellow with dark brown spots and has along the middle of the dorsum a broad, longitudinal tube deeply furrowed longitudinally and laterally undulate. The head is small and very agile as in the larva of *Aslauga*. Pupa black, short and stout. Nigeria to Ogowe.

*leucyania*.

**E. leucyania** Hew. (♀ = *sjöstedti* Auriv.) (64 c). ♂. Wings above one-coloured red-brown, beneath white with grey or greyish-brown spots or transverse bands bordered with dark; forewing with 3 or 4 similar spots at the costal margin, and with two similar postmedian transverse bands beginning at the costal margin and reaching vein 3; hindwing with several spots in the basal half, a broad, almost straight transverse band from the apex of the wing to the middle of the proximal margin and a somewhat curved antemarginal band. In the ♀ the wings are white, above at the base speckled with brown, with a broad, brown marginal band reaching the discal cell and vein 6, and a blackish-brown costal margin; forewing beneath with some minute, dark striae at the costal margin, a transverse row of three ring-shaped spots dusted with brown about in the middle of the areas 4 to 6, and a submarginal row of 4 similar spots of the areas 2 to 5; hindwing beneath with some indistinct spots at the base, a broad median transverse band and a submarginal band formed, like the bands of the forewings, of ring-shaped spots. Nigeria to Cameroon.

#### 19. Genus: **Teratoneura** Dudg

This peculiar genus seems to me to be most closely allied to *Euliphyra*. Palpi with a somewhat swollen second joint and a thin third joint. The antennae are gradually thickened and almost reach the middle of the



costal margin. Legs stout; the posterior tibiae and posterior tarsi compressed. Margin of the forewing between the apex and vein 4 straight, at vein 4 angled and behind it feebly emarginated; costal margin uniformly faintly curved. Hindwing at the middle of the distal margin obtusely angled and thereby somewhat square; the costal margin behind the middle deeply emarginated. Forewing with 12 veins: 2 and 3 posteriorly distinctly curved, 5 almost in the middle between 4 and 6, 6 from the apex of the cell, 7, 8 and 9 on a joint footstalk. Hindwing with 8 veins: 3 and 4 from the posterior, 6 and 7 from the anterior corner of the cell, 5 from the middle of the transverse vein.

**T. isabellae** *Dudg.* (~~65~~ c). Forewing blackish-brown, above with an orange-yellow spot of the posterior *isabellae*. margin, 6 to 7 mm broad, reaching vein 4 and being continued by three small, orange-yellow discal spots of the areas 4 to 6, beneath with dull yellowish traces of the markings of the upper surface, and at the margin spotted grey and brown. Hindwing above light orange-yellow with a blackish-brown marginal band of only 2 mm width; beneath blackish-brown, at the proximal margin and at the margin in 1 c to 3 grey and decorated with silvery or lead-coloured streaks and spots; a broad transverse line runs from the apex to the middle of vein 1 b and is there split; a silvery spot at the costal margin near the base and two white spots in the discal cell. Sierra Leone.

## 20. Genus: **Iridana** *nom. nov.*

This genus was at first described as *Iris* by STAUDINGER in 1891, then it was denominated *Iridopsis* by myself in 1898. But as both these names had already been used before in zoology, I have been obliged to rebaptise the genus once more.

In the structure of the veins, *Iridana* closely approaches the genus *Teratoneura*, but it deviates particularly by vein 8 (or as we may take it vein 7) being absent and vein 7 being bent semicircularly before its end. The veins 2 and 3 on the forewing are feebly bent, and the veins 3 and 4 emerge from the same place or they are petioled. Costal margin of the forewing slightly bent or almost straight.

In all the species the wings above are more or less extensively coloured bright blue; the blue colour is more expanded in the ♂ and covers at least the greatest part of the discal cell on the forewing. Margin of the forewing in the ♂ straight and more upright, in the ♀ more oblique and bent. The species are closely allied and as yet very insufficiently known; thus the differences are vague and we must regard the following review to be merely provisional.

### Review of the Species.

A. Wings beneath without a metallic submarginal line. Forewing beneath with a triangular, light spot in the discal cell at the costal margin. *I. incredibilis*.

B. At least the hindwing beneath before the margin with a lustrous green or bluish line. Forewing beneath without a light spot in the discal cell.

α. Wings beneath only with two small, whitish-grey discal spots in 4 and 5. *I. perdita*.  
*I. exquisita*.

β. Forewing beneath behind the cell-apex with a whitish-grey discal band formed of 4 spots in 3 to 6, the spots in 4 and 5 being long and large. *I. euprepes*.

**I. incredibilis** *Stgr.* (♀ = *ansorgei* *Smith*) (65 c). In the ♂ the greenish-blue, strongly reflecting colour *incredibilis*. of the forewing above covers the areas 1 a, 1 b and the discal cell, the greatest part of the areas 2 and 3 and about half of the areas 4 and 5, as well as the whole hindwing except the costal, proximal and distal margins which are black in 1 to 2 mm width. In the ♀ the forewing is above black and only in the basal part of the areas 1 b to 3 broadly blue; on the hindwing the margins are 3 mm broad black. The under surface of the forewing is dull black with three light, Isabel-coloured spots in the discal cell, behind the latter and in the anal angle, with a grey costal margin and a light apical part intensely speckled brown, semicircularly bordered with greenish quite at the apex; posteriorly the narrow greenish semicircle is continued as a narrow, violet distal-marginal stripe. Very peculiar is the under surface of the hindwing showing a light brownish-grey ground-colour very densely speckled with dark, in the distal part with dark brown; through the middle runs a rather broad, grey transverse band with a dull silvery lustre in a certain light, more or less bordered with black at its margins and showing in the the middle a reniform macula surrounded by black; all these black margins are more or less bordered with a brownish red; immediately in front of the margin there is a very narrow, linear transverse band with a dull silvery grey lustre, proximally bordered with black, outside before the silvery grey fringes very finely with red-brown. Sierra Leone.

*perdita*.

**I. *perdita* Ky.** (64 c) is mentioned as a ♂ in the description, but it is probably a ♀. Forewing above with a blue spot covering the base of the areas 1 a to 3; hindwing above with a large, blue spot covering the discal cell of the areas 2 to 4 almost as far as the margin, and the anterior longitudinal half of the area 1 c. Forewing beneath blackish with grey discal spots in 1 b, 2, 4 and 5, a red-brown preapical spot and a greenish submarginal line from the costal margin to vein 3 or 2. Hindwing beneath ferruginous with a greenish median band and a greenish submarginal line. Cameroon.

*exquisita*.

**I. *exquisita* Smith** only deviates from *perdita* by the blue colour above leaving only free the costal margin and distal margin of the forewing as well as the margins of the hindwing; besides by the median band and the submarginal line of the hindwing beneath being but little metallic. It is probably the ♂ of *perdita*. Ogowe River.

*euprepes*.

**I. *euprepes* Ham. Druce** (64 c) entirely corresponds with *exquisita* above and deviates beneath by the discal band of the forewing and the more greenish-scaled transverse lines of the hindwings. Rhodesia.

### Second Group of Genera.

Vein 6 on the forewing is distinctly separated from the footstalk of the veins 7 to 9 by a slanting, well developed, upper discocellular vein; the former footstalk, therefore, seems to rise before the apex of the discal cell. The forewing invariably with 12 veins.

### Review of the Genera.

- I. The middle discocellular vein on the forewing is absent; veins 5 and 6 therefore rise from the same place, about midway between 4 and 7. 21. *Deloneura*.
- II. The middle discocellular vein on the forewing is present; veins 5 and 6 therefore always separated at their rise.
  - A. The posterior margin of the forewing in the distal part emarginated. Veins 8 and 9 of the forewing on a long footstalk from 7. 23. *Tumerepes*.
  - B. The posterior margin of the forewing straight or slightly convex. Veins 8 and 9 of the forewing one after the other from 7.
    - α. Veins 10 and 11 of the forewing on a common footstalk from the anterior margin of the discal cell. 29. *Powellana*.
    - β. Veins 10 and 11 of the forewing both rise separately from the anterior margin of the cell, or 10 from the footstalk of 7 to 9 and 11 alone separately from the cell.
      - \*. Vein 9 of the forewing is at least just as long or generally much longer than the footstalk of 7 to 9. 25. *Epitolina*.
      - \*\*. Vein 9 of the forewing is always much shorter than the footstalk of 7 to 9.
        - §. Vein 11 of the forewing is for a long distance united with vein 12. 26. *Phytala*.
        - §§. Vein 11 of the forewing runs quite separately or it touches vein 12 only in one place.
          1. The posterior angle of the discal cell of the hindwing projects in an acute angle. 24. *Neaveia*. 27. *Epitola*.
          2. The posterior angle of the discal cell of the hindwing is rectangular and does not project. 28. *Hewitsonia*.

### 21. Genus: **Deloneura** Trim.

The genus was established by TRIMEN on a very rare South African species. Later on also other species have been discovered, and for one of them the genus *Poultonia* Neave has been established, which, however, cannot be distinguished from *Deloneura*.

*Deloneura* is particularly distinguished by the veins 5 and 6 of the forewing rising from the same place and being separated from the footstalk of the veins 7 to 9 by a long, slanting upper discocellular vein.

The ♂♂ deviate from the ♀♀ by the forewing exhibiting a sharper apex, a more convex margin and an oblong, narrow, mealy spot on vein 1, and by the forefeet being unjointed.



## Review of the Species.

- A. Both wings above and beneath light yellow without markings. *D. immaculata*.
- B. Wings with a bright ochreous-yellow ground-colour. The forewing with a black costal margin and black marginal band at least as far as vein 4.
- α. Hindwing above without a dark marginal band. The marginal band of the forewing is posteriorly pointed and reaches vein 3 at most. *D. millari*.
- β. Hindwing above with a blackish marginal band. The marginal band of the forewing reaches the anal angle. Hindwing beneath with a violettish-brown ground-colour.
1. Marginal band of the hindwing above about 3 mm broad. Marginal band of the forewing beneath spotted light. Hindwing beneath with crescentiform, light discal spots arranged in two rows. *D. barca*.
2. Marginal band of the hindwing above only 1 to 1½ mm broad. Marginal band of the forewing beneath unspotted. Hindwing beneath with a transverse row of rounded, light discal spots. *D. ochrascens*.

**D. immaculata** *Trim.* has the wings one-coloured light yellowish without markings. Head, thorax, *immaculata*. palpi, antennae and legs blackish. This rare butterfly was discovered by J. BOWKER in the year 1863 in the Caffraria proper, but it has not been found again later on.

**D. millari** *Trim.* (64 d as *millori*). Wings above bright ochreous-yellow or light orange-yellow; *millari*. forewing with the costal margin blackish-brown as far as the discal cell and to the footstalk of the veins 7 to 9, and with a blackish-brown apical band being posteriorly pointed and only reaching vein 3 or 4; hindwing above one-coloured without markings. Forewing beneath coloured and marked almost as above; the dark markings, however, of a lighter colour. Hindwing beneath in the ♂ blackish-brown with a broad, light brownish-grey marginal band, in the ♀ as far as the margin dark brown with numerous blackish markings. Natal.

**D. barca** *Smith* (65 c). Both wings above light ochreous-yellow with a black marginal band of about *barca*. 3 mm width and a black costal margin of the forewing. Forewing beneath as above but lighter and with small, yellow submarginal spots in 3 to 6. Hindwing beneath violettish-brown with a yellow spot at the base of the costal margin, about 6 or 7 yellow dots in the basal part and a double, bent transverse row of crescentiform, light discal spots. Angola.

**D. ochrascens** *Neave* is very much like the preceding species and only deviates from it by the marks *ochrascens*. stated in the review. British East Africa; Cavirondo.

22. Genus: **Batelusia** *Ham. Druce*.

I have not been able to examine this genus. The extremely short description runs as follows: „Allied with *Powellana* *Beth.-Bak.*, from which it differs by veins 10 and 11 of the forewing rising directly from the cell and not being petioled as in *Powellana*.“ In this respect *Batelusia* consequently harmonizes with the other genera of the group of genera. As no other marks are mentioned, I was unable to place the genus in the review of the genera. If the figure is correct, the veins 5 and 6 on the forewing rise from the same place. If this is really the case, *Batelusia* undoubtedly belongs near *Deloneura*. The veins 8 and 9 of the forewing are not visible in the figure, but they are probably present.

**B. zebra** *Ham. Druce* (64 d). Both wings above cream-coloured without any other markings but a *zebra*. black marginal band of the forewing, 5 mm broad at the costal margin, posteriorly somewhat narrowed, obtusely ending in area 1 b, and dark transverse lines showing through from beneath. Wings also beneath creamy with 6 dark transverse lines and between them partly suffused with yellowish; the dark marginal band of the forewing is entirely absent beneath. Cameroon: Bitje.

23. Genus: **Tumerepes** *Baker*.

BETHUNE-BAKER has denominated the genus *Tumerepedes*. Although I am of the opinion that the names of genera ought not to be changed, yet it seems to me impossible to use a name in the plural as the name for a genus. I therefore use the singular *Tumerepes*. Palpi short; the last joint bare and about as long

as the two first together. Femora and tibiae of all the legs distinctly swollen. Antennae short. Forewing with the costal margin very convex at the base and the posterior margin emarginated before the middle almost as far as the anal angle. Discal cell of the forewing shorter than half the wing, veins 2 and 3 rising near each other far before the posterior angle; 4 from the posterior angle, 5 from the anterior angle, 6 from the cell, 8 and 9 on a long footstalk from 7, 10 and 11 separately from the cell, the latter almost from the middle of the cell. Hindwing with the veins 3 and 4 on a short footstalk from the posterior angle of the cell, 5 nearer to 6 than to 4, 6 from the apex of the cell, 8 short, at the base very much bent.

*flava.* **T. flava** Baker. Head, thorax, abdomen and both wings ochreous-yellow; forewing at the costal and distal margins very broadly black; hindwing with a very broad black marginal band gradually tapering off towards the anal angle and apex. Expanse of wings: 41 mm. On the Upper Niger.

#### 24. Genus: **Neaveia** Ham. Druce.

This genus seems entirely to harmonize with *Epitola* in the neurulation. It is not stated in what way it differs from *Epitola*. As I was unable to examine the species, I must leave this a mooted question. In the ♂ we notice a streak-shaped mealy spot on vein 1 on the forewing above as in *Deloneura* and many *Epitola*-species.

*lamborni.* **N. lamborni** Ham. Druce (64 d). Both wings above and beneath yellowish white with a slight greenish tint; forewing above at the costal margin and distal margin broadly black or brown; the black band at the apex about 6 mm, at the anal angle only 1 mm broad. Hindwing without markings. Palpi black; the second joint on the inside covered with brown hair. Nigeria, near Oni.

#### 25. Genus: **Epitolina** Auriv.

This genus is likewise closely allied with *Epitola* and only deviates by the short footstalk of the veins 7 to 9 on the forewing. Antennae with long, thin joints and a distinctly defined club.

In the ♂♂ both wings are above black with a steel-blue or somewhat violet reflection; in the ♀♀ the forewing shows an orange-yellow spot reaching vein 1, but not the posterior margin.

**E. dispar.** The under surface of the hindwing with little distinct, reddish or light yellowish spots or transverse bands; in the ♀ the yellow spot of the forewing above in area 2 is about 2 to 2½ mm broad, tapering off and pointed anteriorly, ending at vein 6. In **dispar** Ky. (64 d) the discal band of the hindwing beneath is thickened and broader than the other bands. Ashanti to Ogoewe. — **cordelia** Ky. (?) only deviates by the rows of spots or transverse bands on the hindwing beneath being all narrow and equally broad. Cameroon to Gabun. — **melissa** Ham. Druce has above in the ♂ a violet reflection and agrees with *cordelia* beneath or it has an almost unspotted under surface. Addah.

*catori.* **E. catori** Baker seems to deviate from *dispar* by the under surface showing sharply defined red markings, and by the orange-yellow spot of the forewing being very broad in the ♀. Sierra Leone.

#### 26. Genus: **Phytala** Westw.

In the neurulation *Phytala* only deviates by the veins 11 and 12 of the forewing being fused for some distance. In the ♂♂ the wings above are for the greatest part of a bright blue colour. The ♀♀ are still unknown, except the ♀ of *elais*.

#### Review of the Species.

- I. Large species, 60 to 70 mm. The wings beneath with alternatively light and dark, broad transverse bands. ♂: The greenish-blue colour of the forewing above without black spots; the forewing above at the base of the posterior margin with a blackish mealy spot. *Ph. elais*.
- II. Smaller species, 32 to 36 mm. ♂. The blue colour of the forewing above with black spots in the discal cell and in the base of the areas (2, 3), 4 to 6.



A. Hindwing beneath with a broad, white or whitish median band.

α. ♂. Forewing above at the base of area 1 a with a small, oval, dark mealy spot, whereby vein 1 is very much bent forward at its base.

\*. The blue colour of the hindwing above in the ♂ almost reaches the margin in the areas 1 c to 6 and is separated from the dark fringes only by a very fine black marginal line.

1. The median band of the hindwing beneath is everywhere almost of the same width. In the middle between the margin and the median band runs a light submarginal line.

*Ph. hyetta*.

2. The median band of the hindwing beneath is in the areas 5 and 6 distinctly expanded outwards; no light submarginal line.

*Ph. hyettoides*.

\*\*.

Hindwing of the ♂ above with a black marginal band of 2 mm width.

*Ph. hyettina*.

β. ♂. Forewing above without a mealy spot at the base of area 1 a; vein 1 at its base almost straight.

*Ph. intermixta*.

B. Hindwing beneath without a light median band. ♂ forewing without a mealy spot at the base. Hindwing above almost as far as the margin blue.

*Ph. henleyi*.

**Ph. elais** *Doubl. & Hew.* (64 f). This magnificent species is distinguished from all the others by its *elais*. size and light-banded under surface. In the ♂ the wings are above of a bright blue with a broadly black apex and margin of the forewing; costal margin of the forewing and distal margin of the hindwing narrowly black; costal and proximal margins of the hindwing broadly black. In the ♀ the wings are above blackish-brown with an indistinct blue tint; the forewing between the middle of the costal margin and vein 4 with a broad, irregular, yellow transverse band. Ashanti to Kuilu and Bangasso on the Upper Ubangi. — **catori** *Baker* deviates *catori*. by the forewing above showing at the cell-apex a large black spot in the blue colour. Sierra Leone.

**Ph. hyetta** *Hew.* (65 d). ♂ forewing above jet-black with blue spots in the discal cell, and the areas *hyetta*. 3 to 6 and in 1 b and 2 as far as beyond the middle blue; beneath blackish-brown, at the distal and proximal margins whitish-grey, and with 4 white spots (in 2, 5, 6, and the cell). Hindwing above bright blue with black veins, at the costal margin as far as the cell and vein 6 or the middle of area 6 black, at the proximal margin as far as vein 1 b blackish-brown; beneath dark brown with a straight, whitish median band of 2 mm width, extending before the apex to the middle of the proximal margin, and with a curved, light submarginal line. Angola.

**Ph. hyettoides** *Auriv.* (65 f). ♂ forewing above of a bright light blue at the costal margin, at the apex *hyettoides*. and margin broadly black and with a large black spot in the base of the areas 4 to 6; beneath dark brown with a grey proximal margin and grey discal spots in 2 to 6. Hindwing above as in *hyetta*, beneath with an intense silky lustre, with a broad, whitish median band very much expanded in the areas 5 and 6.

**Ph. hyettina** *Auriv.* (65 d) is beneath similar to *hyettoides* and differs above only by the black mar- *hyettina*. ginal band of the hindwing being much broader and the black spot at the apex of the discal cell of the forewing much larger. Sierra Leone.

**Ph. intermixta** *Auriv.* The ♂ deviates from the preceding species by the entire absence of the mealy *intermixta*. spot at the base of the forewing. Forewing above black with 2 or 3 spots in the discal cell, 3 in 1 b and one each in 1 a, 2 to 6 and 9 of a bright blue; beneath blackish-grey, at the proximal margin broadly grey and with a discal and a submarginal row of grey spots. Hindwing black in the cell and the areas 1 c to 5 of a bright blue; the veins 2 to 4 bordered with black; the black marginal band about 2 mm broad; beneath with a straight, whitish median band of about 2 mm width. On the Kuilu River.

**Ph. henleyi** *Ky.* (64 d). ♂. Wings above coloured and marked almost as in *hyettina* (65 d); the black *henleyi*. marginal band of the hindwing, however, very narrow. Forewing beneath blackish, at the posterior margin as far as vein 2 grey, with three grey discal spots (in 2, 4, 5) and such submarginal spots; hindwing beneath dark brown without a light median band. Forewing above without a mealy spot at the base of the proximal margin. Cameroon.

## 27. Genus: **Epitola** *Westw.*

This genus comprises numerous species with, particularly in the male, a very beautiful blue, violet or green reflection or an intense metallic lustre. Most of the species are rare and incompletely known. The ♀♀ deviate considerably above from the ♂♂, but of many species they have not yet been described.

The veins 10 and 11 of the forewing normally rise from the costal margin of the cell and run quite separately; in some species, such as *honorius*, *carcina*, *leonina* and *zelza* vein 10, however, rises from the footstalk of 7 to 9 or from the same place as this footstalk, and sometimes vein 11 touches vein 12 in one place (*posthumus*-♀, *doleta*, *leonensis*).

The deviations in the neuration make it difficult to divide the species in natural groups. The grouping of the species, however, according to the marking beneath, the shape of the wings and the mealy spots of the ♂♂ seems to me to render a better result.

#### Review of the Groups of Species.

- A. Hindwing beneath at the base with black punctiform spots in the discal cell and in the areas 1 c, 7 (and 8). — ♂. Hindwing above in area 1 a or on vein 1 with a longitudinal row of black hair turned backward.
  - α. Margin of the hindwing at the end of vein 3 obtusely lobated. Hindwing beneath at the base dark violettish-grey. — ♂: forewing above without a mealy spot in the areas 5, 6 and 9. First group of species.
  - β. Hindwing completely margined with a very much bent margin, beneath at the base brownish-yellow. Vein 10 of the forewing rises from the footstalk of 7 to 9 far away from the cell. — ♂: forewing above with a large, blackish-grey mealy spot covering the base of the areas 5, 6 and 9. — Subgenus: *Aethiopana* Bak. Second group of species.
- B. Hindwing beneath without black basal dots.
  - α. Under surface of hindwings with a metallic (golden or violet) lustre, with or without large white spots. Costal margin of the forewing beneath at the base with a golden or brass lustre. — ♂. Forewing above in 1 a along vein 1 with a row of long hair turned backward. Third group of species.
  - β. Wings beneath whitish-grey — dark brown — blackish, with or without spots, but always without a metallic lustre. — ♂: forewing without a hair-comb.
    1. ♂. Forewing above with a large, dark mealy spot. Fourth group of species.
    2. ♂. Forewing without a special mealy spot.
      - a) ♂. The submedian or the median of the forewing or both above at the base thickened and densely clad with black scales. Fifth group of species.
      - b) ♂. None of the veins on the forewing thickened at the base. Sixth group of species.

#### First Group of Species.

The two species of this small group deviate from all the others and at any rate from all the Liptenins known by the shape of the wings. The margin of the forewing is quite straight between the apex and vein 5, forms a sharp angle at vein 5 and is then deeply emarginated between 5 and 3. The margin of the hindwing is somewhat irregular and forms an obtuse tooth or short lobe at vein 3. The hindwing is beneath dark violettish-grey, with several large, black dots in the discal cell and in the areas 1 c and 7 and sometimes also in 8.

*hewitsoni*.

**E. hewitsoni** Mab. (65 d). In the ♂ both wings are above bright blue from the base to far beyond the middle, without black spots; the costal margin of the forewing is narrowly (only to vein 12) black; the black marginal band of the forewing is 5 to 8 mm, that of the hindwing about 3 mm broad. Forewing beneath blackish violettish-brown, at the proximal margin lighter, before the apex with a straight, oblique transverse row of 5 whitish spots in 3 to 6 and 9, and some indistinct light spots nearer at the apex. Hindwing beneath dark violettish-brown with 12 to 14 black dots in the basal half and two transverse rows of black streaks or spots in the marginal half. The ♀ unknown to me probably shows a white subapical band on the forewing above. Expanse of wings: about 50 mm. This rare species was hitherto only taken at the northern side of the mouth of the Congo near Chinchoxo and Landana.

*miranda*.

**E. miranda** Stgr. (64 e) deviates from *hewitsoni* by the blue colour above being beautifully violettish-blue and covering only the base of the areas 1 b and 2 on the forewing and forming separate spots in 3 to 6 and 9; the discal cell is almost entirely black; on the hindwing the black costal-marginal band is very broad



and reaches the discal cell and vein 6. The under surface is distinguished by the veins in the marginal part and the internerval folds being broadly bordered with black or accompanied by black streaks and spots. The ♀ is unknown. Sierra Leone and Gabun (?).

### Second Group of Species.

It only comprises a single, very well distinguished species, the sexes of which are quite different above.

**E. honorius** has a very peculiar, somewhat *Planema*-like under surface; forewing beneath blackish, at the apex yellowish, in the ♂ with white discal spots in 3 to 6 and 9, and similar spots at the margin in 1 b and 2 and with small blue spots at the apex of the cell and in the basal part of 4 and 5, in the ♀ instead of the spots with a broad, white discal band. Hindwing beneath as far as the apex of the discal cell brownish-yellow with 11 black dots (3 after each other in 1 c, 2 in the cell, 2 on the terminal vein, 2 in 7, and 2 in 8), then greyish-brown with black veins and black longitudinal rays between the veins; from the costal margin, a little behind the middle, a whitish transverse band of 1 mm width extends to vein 4 and is then obliquely continued in the area 3 to the margin. In the ♂ the forewing above is black, whilst the discal cell, the areas 1 a and 2 almost as far as the margin of the basal half of 3 and small spots in the middle of the areas 4 to 6 and 9 are of a bright blue; the base of the areas 5, 6 and 9 is filled up as far as the blue discal spots by a very large, blackish-grey discal spot; the hindwing from vein 1 b at least to vein 6 of a bright blue with a very fine black marginal line. In the ♀ the forewing is above black with a blue longitudinal streak at the base in 1 b and a broad, white discal band, and the hindwing blackish-brown, with a light bluish discal cell and base of the areas 1 a and 2. — **honorius** *F.* (64 e). In the ♂ the blue discal spots of the forewing *honorius*. are larger in 5, 6 and 9, and the mealy spot somewhat smaller; in the ♀ the white discal band of the forewing ends in area 2, and the hindwing above shows a large, white spot in 3 to 5, approximating the blue basal area. Cameroon to Congo and Bangassou on the Upper Ubangi. — **divisa** *Btlr.* deviates only by the ♂ showing *divisa*. a larger mealy spot on the forewing and smaller blue discal spots of the areas 5, 6 and 9, whilst in the ♀ the white discal band of the forewing reaches vein 1 and the white area of the hindwing is absent. Sierra Leone — Ashanti.

### Third Group of Species.

This group also comprises large or medium-sized species particularly distinguished by the metallic lustrous under surface decorated with large, light spots.

### Review of the Species.

- A. The whole discal cell and in the ♂ also the basal part of the areas 4 to 6, 9 and 10 of the forewing above broadly blue, with an intense metallic lustre. The apex of the forewing broad and obtusely extended; its margin in the middle deeply emarginated. — ♂: The hair-comb of the forewing lies close at vein 1 and separates from it only near the base.
 

*E. posthumus.*  
*E. urania.*
- B. The discal cell at least partly and the areas 4 to 6 on the forewing above quite black. The apex of the forewing not or scarcely extended and its margin straight or only little concave. Hindwing beneath with white markings. — ♂: The hair-comb of the forewing runs only for a short distance close at vein 1 and then gradually separates from it towards the base.
  - α. Larger species, 48 to 52 mm. Wings beneath with a dark violet lustre and white spots. In the ♂ the blue colour of the forewing above covers also the posterior margin of the discal cell and the base of area 3; forewing above without a mealy spot.
 

*E. crowleyi.*
  - β. Smaller species, 40 to 46 mm. Hindwing beneath with a yellowish metallic lustre. The discal cell and the base of the area 3 on the forewing above is black. Forewing in the ♂ above with a small mealy spot before the middle of vein 3.
 

*E. ceraunia.*

**E. posthumus** *F.* (64 e). ♂. Both wings above beautifully blue, with a greyish reflection; the apex of *posthumus*. the forewing about 10 mm broad black; the black marginal band posteriorly rapidly grows narrower and ends

pointedly at vein 2; the basal third of the costal margin as far as the cell black, at the middle of the costal margin the blue colour, in a width of 9 to 10 mm, almost reaches the costal margin or at least vein 11; the blue colour distally forms a feeble, almost uniform bow. Hindwing above in the areas 1 c to 6 almost as far as the margin blue and also in the area 7 rather broadly dusted with blue; the black marginal line very narrow. Beneath the hindwing as well as the apex and costal margin of the forewing exhibit a bronze lustre, and besides there is a large, lighter spot with a yellowish reflection at the base of the costal margin of the hindwing; forewing otherwise dull blackish-brown with a whitish spot in the cell and grey discal spots in 2 to 6 and 9. In the ♀ the blue colour above is lighter and much less extensive; on the forewing it only covers the discal cell, the greatest part of the areas 1 a and 1 b and the basal half of the areas 2 and 3; besides there are three small spots at the costal margin in 6, 9 and 10; the hindwing has a very broad, irregular, black marginal line dentate at the veins. Sierra Leone to Congo.

*urania.* **E. urania** Ky. is known only in the male and differs but little from the ♂ of *E. posthumus*. The blue colour of the forewing is only 4 mm broad at the costal margin in the areas 9 and 10 and distally at the veins deeply and irregularly indented; the black marginal band reaches the posterior angle and is much broader, in the area 2 about 4 mm broad; the black marginal band of the hindwing is also somewhat broader and shortly dentated at the veins. The under surface of the hindwing is darker brownish-red. Sierra Leone to Cameroon.

*crowleyi.* **E. crowleyi** Em. Sharpe (64 e) ♂. Forewing above black with a large blue spot covering the areas 1 b, 2 and 3 at a distance of 3 to 5 mm from the margin, and forming also a longitudinal stripe at the posterior margin of the discal cell; vein 1 is curved in the shape of an S, and the area 1 a almost entirely black with a series of long black hairs; hindwing above between the veins 1 b and 6 blue with a black marginal band of .2 mm width; forewing beneath black, at the apex violettish-brown with an S-shaped transverse row of oblong, white discal spots in 1 b to 6 and 9, the costal margin as far as the middle whitish and at the base with a golden or brass lustre; hindwing beneath whitish with red-brown spots and longitudinal streaks, the discal cell almost quite red-brown. The ♀ is larger and deviates by the forewing above being black with a blue longitudinal streak in 1 b and white discal spots in 2, 4 to 6 and 9, and by the white colour on the hindwing beneath being more extensive; the forewing beneath as above, but without a blue longitudinal streak and with 2 or 3 small, white marginal spots in 3 and 4. Sierra Leone to Nigeria.

*ceraunia.* **E. ceraunia** Hew. (64 e) ♂. Forewing above black, in the areas 1 b and 2 blue as far as 3 mm distant from the margin, and with separate blue spots in 3, 4 and the discal cell, beneath blackish with distinctly prominent, white spots two of which are in the discal cell near the apex and one each in the areas 1 b to 6 and 9, of which those in 4 and 5 are near the margin. Hindwing above between the veins 1 b and 6 blue with a narrow, black marginal band of 1 mm width; beneath brown with a yellowish lustre and a distinctly prominent, white transverse band and longitudinal stripe at the costal margin in area 7. The ♀ deviates by grey discal spots in 3 to 6 and in the discal cell on the forewing above, and by a black marginal band of 4 to 5 mm width on the hindwing above; the hindwing is beneath lighter and less sharply marked than in the ♂. The pupae were found by W. A. LAMBORN in small colonies fastened obliquely upright on the upper surface of leaves. Sierra Leone to Gabun.

#### Fourth Group of Species.

The large mealy spot distinguishing the species of this group is sometimes situate at the base, sometimes at the margin.

#### Review of the Species.

A. The under surface lighter or darker brown with or without light spots.

α. Under surface monotonously greyish-brown without markings. The mealy spot of the ♂ is very large, jet-black, four-cornered, reaching almost the margin and covering the greatest part of the areas 2 to 4.  
*E. staudingeri.*

β. Under surface with distinct light macular rows.

\*. The mealy spot is situate at the margin in the areas 2 to 4 entirely as in *staudingeri*.  
*E. gordonii.*



\*\* The mealy spot is light grey, covering the bases of the areas (1 a and) 1 b and of the cell, but it is separated from the dark costal margin by a blue line of the cell. *E. carcina*.

B. Under surface white with dark spots at least at the margin. The mealy spot of the ♂ covers the base of the forewing and reaches the costal margin. The ♂ forewing without a black transverse streak at the end of the discal cell. *E. gerina*.

**E. staudingeri** Ky. (65 d) deviates from all the other species except *gordonii* by the position of the large *staudingeri*. black mealy spot on the forewing. In the ♂ both wings are above blue; the costal margin of the forewing is narrowly black, its apex only 3 mm broad triangularly black, and the black marginal band is only 1 mm broad. Hindwing only with a very fine, dark marginal line, and at the costal margin as far as vein 7 black. Under surface unspotted. ♀ unknown. Sierra Leone and Gabun.

**E. gordonii** Ham. Druce is above entirely like the ♂ of *staudingeri* and only deviates by the light spotted *gordonii*. under surface; it is probably only a race of it. Bonny.

**E. carcina** Hew. (65 d) was originally described according to a ♀. Whether the ♂ described and figured *carcina*. here belongs to the ♀, is unfortunately not quite certain. ♂: Wings above light delicately violettish-blue, the costal margin of the forewing as far as the cell and the apex in a width of 6 mm black, at the margin the black colour ends pointedly at vein 1; the blue colour of the forewing is distally bordered almost rectilinearly, covers the base of the areas 2 to 6, reaching the anal angle in 1 a, but at the base it is somewhat deteriorated by the large mealy spot of about 3 mm width; hindwing at the costal margin as far as vein 6 black, at the proximal margin in 1 a and 1 b grey; the black marginal line very fine. Under surface brown with several transverse rows of whitish spots. — In the ♀ the forewing above has only a blue spot of the posterior margin of 6 mm width, reaching only vein 2 and being anteriorly accompanied by a somewhat bent transverse row of 5 small white discal spots of the areas 2 to 6; hindwing above only at the middle of the basal part blue with a black marginal band of 3 mm width; under surface almost as in the ♂, but with distinct, white discal dots on the forewings. Sierra Leone to Kulilu.

**E. gerina** Hew. (65 b) deviates from the other species of this group by the whitish under surface *gerina*. decorated with small, light brown spots and streaks. In the ♂ the mealy spot of the forewing is about 5 mm broad and covers the whole base as far as the costal margin, the blue colour being thereby confined to a median band of 7 to 8 mm width, reaching the footstalk of 7 to 9 and the anal angle; hindwing above as in the ♂ of *carcina*, but at the proximal margin blackish. If DRUCE is correct in presuming that *E. goodii* Holl. (65 e) belongs to *gerina*, *goodii* must be the ♀ of *gerina*, since it deviates by the absence of the mealy spot on the forewing (the blue colour reaching the base). The light brown markings beneath are distinctly prominent and are therefore much more distinct than in HEWITSON's figure of the ♂. Congo and Ogowe.

### Fifth Group of Species.

In this group the ♂ forewing has no large mealy spot, but instead of it one or two veins at the base thickened and covered with black scales. The forewing beneath is without a black longitudinal stripe. The ♂♂ are always above coloured black and blue with a linear, or very narrow black marginal band of the hindwing. In the ♀♀, however, that are still little known, the blue colour is very much reduced, and the black marginal band on the hindwing is always broad; on the forewing the blue colour is sometimes in the middle replaced by white. The margin of the forewing is uniformly bent or almost straight.

The species are closely allied, and their differences have not yet been all exactly ascertained. The following review of the species must therefore be regarded merely as a preliminary attempt.

### Review of the Species.

I. Wings beneath dark brown, often with light markings.

A. ♂ Only the median of the forewing is above at the base thickened and scaled black.

α. Fringes feebly undulated and spotted white.

*E. marginata*.

β. Fringes entirely margined and one-coloured.

\*. ♂. The discal cell on the forewing above quite black. The blue colour forms only a broad, but short spot of the posterior margin, anteriorly bordered by the discal cell and vein 3.

*E. tumentia*.

\*\* . The discal cell of the forewing above is quite blue or for the most part so; the blue colour extends behind the cell at least to vein 5, generally to the footstalk of 7 to 9.

§. Forewing above without a black transverse streak or spot at the end of the discal cell \*).

†. The bluish-white discal and submarginal spots on the forewing beneath are united in the areas 1 a and 2 into large spots of 3 to 4 mm length. *E. cercene*.

††. The light spots on the forewing beneath are not united into large spots.

1. Both wings beneath as far as the base with numerous, distinctly prominent, whitish-grey transverse streaks and transverse bands. *E. albomaculata*.

2. The wings beneath only at the margin with 2 or 3 transverse rows of light spots.

a. ♂. The blue colour of the hindwing is anteriorly bordered by vein 6 or it only forms a narrow stripe in area 6. Hindwing only with a fine black marginal line. *E. badura*.

b. ♂. The blue colour of the hindwing covers also the area 6. The black marginal band of the hindwing almost 1 mm broad. *E. badia*.

§§. Forewing above with a black transverse streak or spot at the end of the discal cell (to this division belongs also the incompletely described *E. umbratilis*).

1. Hindwing above only with a fine black marginal line.

a. ♂. The blue colour of the forewing only reaches vein 5 or it only forms small, separate scaled spots in 5 and 6. *E. leonina*.

b. ♂. The blue colour of the forewing reaches the footstalk of 7 to 9. *E. khalifa*.

2. Hindwing above with a black marginal band of at least 1 mm width. The blue colour of the forewing reaches the footstalk of the veins 7 to 9.

a. Under surface with numerous light markings. *E. moyambina*.

b. Under surface one-coloured dark brown without light markings. *E. uniformis*.

B. ♂. The submedian and sometimes also the median of the forewing above at the base thickened and covered with black scales.

α. ♂. Forewing above without a black streak at the end of the discal cell. Wings beneath almost as in *E. cercene*. *E. batesi*.

β. ♂. Forewing above at the end of the discal cell with a triangular, black indentation cohering with the black costal margin.

1. ♂. The black marginal band on the hindwing above narrow. *E. cercenoides*.  
*E. dorothea*.

2. ♂. The black marginal band on the hindwing above very broad. *E. oniensis*.

II. The under surface of both wings white with or without dark markings. Hereto belongs also *E. virginea* of which only the ♀ is known, and probably *concepcion*. The forewing above without a black streak at the end of the discal cell.

α. Under surface without or with indistinct markings. *E. zelica*.

β. Under surface with distinct dentate lines. *E. nitida*.

*marginata*.

***E. marginata*** Ky. (65 e). ♂. The blue colour of the forewing covers the whole cell, reaches the footstalk of the veins 7 to 9, being distally slantingly, almost rectilinearly bordered and reaches the anal angle at the posterior margin; from the black costal margin, at the end of the cell, a triangular black spot extends into the blue colour. Hindwing above between the veins 1 b and 6 almost as far as the margin blue. Under surface blackish-brown with 2 or 3 bluish-white transverse lines in the marginal part. In the ♀ the hindwing is above dark brownish-grey without markings, and the forewing has instead of the blue colour of the ♂ a white, inwardly violettish-blue surface with a curved black streak at the end of the cell. Under surface much lighter than in the ♂ and with a white median band of the forewing. Cameroon to Gabun.

*tumentia*.

***E. tumentia*** Ham. Druce (64 g). ♂. Forewing above black with a blue spot of the posterior margin, reaching only vein 3 and anteriorly bordered by the median. Hindwing above between the veins 1 b and 6

\*) To this division belongs also *E. zelza*.



blue with a black marginal band growing broader anteriorly and gradually passing over into the black costal margin. Under surface yellowish-brown with indistinct, small white discal dots. ♀ unknown. North Nigeria near Afikpo.

**E. cercene** Hew. (65 f). The large, blue spot of the posterior margin on the forewing covers the whole cell, reaches the footstalk of the veins 7 to 9 and then extends in a slight bow almost to the posterior angle; hindwing above between the veins 1 b and 6 and as far as the margin blue; wings beneath greyish-brown with transverse rows of bluish-white spots; the discal and submarginal rows of the forewing are posteriorly, in the areas 2 and 1 a, united into large, conical spots proximally bordered by black. ♀ unknown. Cameroon to Angola.

**E. albomaculata** Baker (65 e) is above quite similar to *cercene* and deviates beneath only by the numerous, light transverse streaks and transverse lines which, however, are not flown together in the areas 1 b and 2 on the forewing. In the ♀ the blue colour of the forewing is lighter and less extensive, in the area 4 a white sub-apical spot; hindwing above with a very broad, dark marginal band; under surface as in the ♂. Sierra Leone.

**E. badura** Ky. (64 g as *badwia*). The ♂ only deviates from *cercene*-♂ by the marks mentioned in the review of the species. In the ♀ the blue colour of the forewing only reaches vein 5, and the hindwing has a black marginal band of 4 mm width. Cameroon to Gabun.

**E. badia** Ky. (64 g) is somewhat smaller than *badura*, but otherwise only different by the marks mentioned above; the light macular rows beneath are larger and more distinct than in *badura*. Cameroon.

**E. zelza** Hew. (65 e) is obviously figured and described according to a damaged specimen; the marks are therefore scarcely reliable. The forewing, according to the figure \*), deviates from all the other species by being above black with two blue longitudinal rays, one of which comes from the base, covering area 1 b and almost reaching the margin; the other covers the discal cell and is much shorter; the areas 2 and 3 are quite black and form a deep indentation between the rays. The under surface is alternately indistinctly banded brown and grey. Old Calabar.

**E. leonina** Stgr. (65 e) ♂. Forewing above with a blue spot of the posterior margin, covering the cell, almost reaching the cell and being anteriorly bordered by vein 5; small bluish spots near the middle of the areas 5 and 6; a black transverse streak at the cell-end; hindwing above between the veins 1 b and 6 as far as the margin light blue; a fine black marginal line. Both wings beneath dark greyish-brown with indistinct antemarginal spots. — In the ♀ the forewing shows a white median transverse band, being about 6 mm broad in area 2, only 2 mm broad in area 9, and extending from the posterior margin to vein 10; within this band the areas 1 a, 1 b, and the discal cell are scaled greenish; a triangular, black spot at the end of the cell; hindwing above blackish-brown, suffused with green in the discal cell end at the base; under surface as in the ♂, but with a white transverse band shaped almost as above, but being broader and reaching the anal angle. Sierra Leone.

**E. khalifa** Baker is allied to the preceding species, but it deviates by the more expanded blue colour of the forewing as well as by the median vein of the ♂ being very much inflated at its base. Under surface greyish-brown with indistinct grey markings. In the ♀ the forewing is at the base light blue; the blue colour, however, does not fill up the cell and is behind the cell accompanied by 4 white spots; the hindwing has a very broad, dark marginal band; the under surface is almost without markings; on the forewing, however, the white spots of the upper surface show through beneath. Sierra Leone.

**E. moyambina** Baker is unknown to me and described as follows: forewing black, from the posterior margin to the subcostal vein and almost to the anal angle of a lustrous azure-blue; at the end of the discal cell the black colour forms a triangular indentation; hindwing greyish-black, between the veins 1 b and 6 blue with a rather broad, black marginal band. Both wings beneath greyish-brown with numerous, whitish-grey markings almost to the base. Sierra Leone.

**E. uniformis** Ky. (64 h). Under surface dark brown without markings. The ♂ only differs from *leonina*-♂ by the marks mentioned in the review. In the ♀ the blue areas are light violettish-blue; the spot of the posterior margin on the forewing only reaches vein 5 and is at least 2 mm distant from the anal angle; the marginal band of the hindwing is 2 mm broad. The species is smaller than the two preceding species and has an expanse of wings of 32 to 33 mm. Cameroon.

**E. umbratilis** Holl. The short description says: „Allied with *E. marginata*, but lighter blue and with completely margined, not white-spotted fringes. The under surface is likewise different; the ground-colour is the same, but the irregular, zigzag-shaped markings are more numerous and more distinct and arranged in well defined transverse rows, whereby the wings look like banded. Ogowe River“. These marks are not sufficient for ascertaining the species.

**E. cercenoides** Holl. is likewise unknown to me. ♂. Both wings are above intensely dark blue with a green reflection; the costal margin of the forewing is narrowly and the apical third broadly black; a somewhat

\*) HEWITSON'S figures are copied here.



bent, black spot at the apex of the discal cell; the median and submedian at the base scaled black. The costal margin of the hindwing broadly and the distal margin very narrowly black. Both wings beneath dark lead-coloured grey with numerous transverse rows of light blue, undulate lines and sagittate spots, those at the anal angle of the forewing being the largest. Ogowe River.

*dorothea*.

**E. dorothea** Baker is obviously closely allied with *cercenoides*. According to the description the wings are blue in the ♂ above; the costal margin of the forewing as far as vein 12 black, a large, black transverse spot at the end of the cell; the submedian at the base thickened and everywhere scaled black; the blue colour distally at the veins deeply indented; fringes whitish. Hindwing: the costal margin as far as vein 6 black, but in the area 6 strewn with some blue scales; margin narrowly black. Wings beneath brownish-grey with numerous whitish markings beginning almost from the base. In the ♀ the forewing above is blackish, with a white median band between the veins 1 and 11; area 1 a and the discal cell strewn with blue scales; hindwings above monotonously blackish-brown with some blue scales at the end of the cell; under surface as in the ♂; the wings, however, as above with a white median band reaching the posterior margin. Sierra Leone.

*oniensis*.

**E. oniensis** Baker is a species described of late, the pupae of which were found near a nest of the ant *Cremastogaster bucheri* v. *alligatrix*. ♂: both wings above of a bright, lustrous blue; the forewing at the apex of the discal cell with a wedge-shaped, black spot; costal and distal margins very broad black; the margin towards the anal angle gradually narrower; both the median and submedian at the bases thickened and scaled black; hindwing at the costal margin as far as vein 6 black and with a very broad, black marginal band. Both wings beneath reddish-brown with whitish markings; forewing with few whitish scales in the cell and at the base of the veins 6 and 3; directly behind the cell a fine, bent irregular line between the veins 2 and 10; a more distinct, postmedian, dentate transverse line from vein 1 b to 10; an indistinct, somewhat broader submarginal line and a marginal line. Hindwing almost similarly marked, but without the extreme line near the margin. Expanse of wings: 36 mm. Nigeria near Oni, in the neighbourhood of Lagos.

*batesi*.

**E. batesi** Ham. Druce (64 h), as we see from the figures, is very much like the two last species and perhaps only different by the absence of the black streak at the end of the discal cell in the ♂ forewing; the submedian is said to be only little thickened. The under surface is about the same as that of *E. cercene*. Cameroon.

*zelica*.

**E. zelica** Ky. (64 h) is distinguished by the purely white under surface being unmarked in the ♀, only indistinctly spotted in the ♂. The blue colour of the upper surface is light violettish-blue and covers a smaller part of the areas 2 to 6 on the forewing than it usually does; no black streak at the end of the cell; hindwing with a black marginal band of 1 mm width. Cameroon.

*nitida*.

**E. nitida** Ham. Druce (64 h). Owing to the excellent figure, a detailed description is superfluous. It deviates from *zelica* by the darker and more extensive blue colour above and by the distinct marking beneath. In the ♂ both the submedian and median are thickened at the bases and scaled black. ♀ unknown. Cameroon. DRUCE denominates the species „*nitide*“ which, however, is French and not Latin.

*virginica*.

**E. virginica** Baker. ♂ unknown. In the ♀ the forewing above is dark brown with light blue scales in the cell and at the posterior margin in 1 a and 1 b as far as beyond the middle of the wing; at the end of the cell and before the apex, as well as at the end of the blue stripe of the posterior margin, there is a white spot. Hindwing above between the veins 1 b and 6 light azure-blue with a very broad, dark marginal band. Beneath both wings are whitish with brownish-grey markings. Expanse of wings: 40 to 41 mm. Sierra Leone.

*concepcion*.

**E. concepcion** Suff. (65 a). The sex is not stated; presumably a ♀. Wings above one-coloured brownish-grey without markings. Under surface whitish with almost the same markings as in *nitida*. Cameroon.

### Sixth Group of Species.

In the ♂♂ the mealy spots of the forewings are absent, and neither of the veins is thickened at the base. Besides they differ from species of the preceding groups with respect of the blue colour of the forewing above, which does not cover the base of the areas 3 to 6, but forms separate spots about in the middle of these areas, and the discal cell is more or less spotted black or sometimes almost quite black. Sometimes also the ♂ is entirely without the blue colour above.

The numerous species are still very rarely met with in the collections and quite insufficiently known.



## Review of the Species.

## I. Both wings or at least the forewing beneath with a dark ground-colour.

## A. Hindwing beneath with a dark ground-colour.

α. Forewing beneath without a blackish longitudinal stripe in the middle. Both wings beneath before the margin at least with traces of transverse rows of light spots. Forewing in the ♂ above with 1 to 3 black transverse streaks in the cell and a thick transverse streak at the cell-end. Hindwing above with a black marginal band of 1 to 2 mm width. (Hereto presumably also belong *E. mus*, *mengoensis* and *mercedes*.)

\*. ♂. The blue colour of the forewing posteriorly bordered by vein 1. The light markings beneath distinct. *E. catuna*.

\*\* . ♂. The blue colour of the forewing reaches the posterior margin. The markings beneath very indistinct. *E. elissa*.

β. Forewing beneath in the middle with a blackish longitudinal stripe beginning at the base, gradually growing broader distally and ending behind the cell in 2 to 5. Hindwing usually beneath one-coloured brownish without markings.

\*. ♂. Hindwing above between the veins 1 b and 6 with a distinctly defined blue area and a black marginal band of 1 to 2 mm width.

§. ♂. Area 1 a of the forewing above quite or for the most part scaled blue; discal cell with 2 blue spots; the areas 1 a to 2 as far as the base and almost to the margin scaled blue.

1. ♂. Forewing otherwise above only with 2 small, blue discal spots in 5 and 6. *E. doleta*.

2. ♂. Forewing above in the areas 3 to 6 with a somewhat bent, coherent transverse band of blue discal spots, following upon the spot of the posterior margin. *E. barombiensis*.

§§. ♂. Area 1 a on the forewing above black without blue spots.

0. ♂. The blue colour on the hindwing above is not parted by a black longitudinal stripe.

1. ♂. Discal cell of the forewing above with a blue spot or blue spots.

a. ♂. The discal cell of the forewing above with a blue longitudinal stripe filling up almost the whole cell. Area 1 b of the forewing as far as the base and as far as 2 mm before the margin blue, area 2 with a large blue discal spot not covering, however, the base; area 3 one-coloured black; areas 4 to 6 with small, blue discal spots. *E. conjuncta*.

b. ♂. Forewing above with two blue spots in the discal cell, and in the areas 1 b to 6 with one blue spot each, not reaching the base of the area; the spots in 1 b and 2 larger than the others. *E. rezia*.

2. ♂. Discal cell of the forewing one-coloured black without blue. Forewing above with large, blue discal spots in 1 b and 2 and small, similar spots in 5 and 6. *E. pinodoides*.  
*E. leonensis*.

00. ♂. The blue colour on the hindwing above is parted by a black longitudinal line following the posterior margin of the cell and vein 4. *E. benitensis*.  
*E. sublustris*.

\*\* . ♂. Hindwing above one-coloured dark brown without markings or with a faint blue hue.

1. ♂. Hindwing above with a blue reflection. *E. pinodes*.

2. ♂. Hindwing above without a blue reflection. *E. nigra*.

B. Hindwing beneath dirty yellowish white, at the margin dusted blackish. *E. adolphi friderici*.

II. Both wings beneath almost one-coloured silvery white or white. *E. ernesti*.

**E. catuna** Ky. (64 g). ♂. The blue colour of the forewing is bordered by the veins 1 and 6; one or two black dots in the cell and a thick, black transverse spot at the end of the cell; the blue spots of the areas 4 and 5 almost reach the bases of these areas, but they are parted by a black transverse streak. Forewing

beneath with a yellowish spot at the cell-end, a curved transverse row of such discal spots and a row of small, yellowish lunae near the margin; between the costal margin and vein 4 a subapical row of such spots. Hindwing beneath with two antemarginal rows and an indistinct discal line. Cameroon to Kuilu.

*elissa*. **E. elissa** *Smith* only deviates from *catuna* (64 g) by the marks mentioned above, and the dark marginal band of 2 mm width on the hindwing above. Nigeria, near Warri.

*mus*. **E. mus** *Suff.* (65 a) (♀?). Wings above one-coloured dark greyish-brown without markings, beneath with a light greyish-brown ground-colour. Forewing beneath at the posterior margin as far as vein 2 steel-coloured grey; the basal part is, between the base of vein 2 and the costal margin, bordered by a strongly bent, whitish, little distinct, dentate line; a somewhat dentate, yellowish-grey antemarginal band. Hindwing beneath in the marginal half with three transverse rows of light, dentate striae or bows. Cameroon: Barombi.

*mengoensis*. **E. mengoensis** *Baker* (65 a). Wings above blackish-brown; forewing in the middle tinted dark violettish-blue; hindwing between the veins 1 b and 6 blue with a broad, dark marginal band. Wings beneath dark brown with one discal (in the forewing incomplete) and two submarginal transverse rows of yellowish-brown spots. Forewing with an acute apex and a convex margin. Uganda: Mengo.

*mercedes*. **E. mercedes** *Suff.* ♀. Wings above one-coloured blackish-brown without markings, in a certain light with a faint, violet reflection. Forewing beneath in the middle just as dark as above, at the margins somewhat lighter. Cameroon: John Albert Hill.

*doleta*. **E. doleta** *Ky.* (64 g). ♂. See above! Forewing beneath not white at the posterior margin; hindwing beneath quite monotonously brownish-grey or with light markings as in *catuna*. Sierra Leone.

*cephena*. **E. cephen**a *Hew.* (65 c). Only the ♀ is known. Wings above blackish; forewing above with a long, light blue spot in 1 b, a bluish-white spot in 2 and two white dots at the costal margin in 6 and 9; beneath all the spots are white, and the margins of a much lighter colour, only the middle blackish. Hindwing above with a blue longitudinal ray covering the discal cell and the bases of the areas 4 and 5 and ending 4 mm distant from the margin, beneath light brownish without markings. Gabun.

*barombiensis*. **E. barombiensis** *Ky.* (65 a). Above different from *doleta* only by the marks mentioned in the review. Hindwing beneath whitish-grey, speckled with brown, at the margin more densely so than at the base. Cameroon: Barombi.

*conjuncta*. **E. conjuncta** *Smith.* ♂. To what has been said above we need only to add that the forewing beneath has two small, whitish dots in 4 and 5 at the anterior margin of the black longitudinal stripe and that the hindwing beneath is quite monotonously brown. The ♀ is above one-coloured blackish-brown with 4 small, yellowish discal spots in 4 to 6 and 9. Sierra Leone.

*rezia*. **E. rezia** *Smith* only deviates from *conjuncta* by the marks mentioned above. Cameroon to Gabun.

*pinodoides*. **E. pinodoides** *Smith* is very closely allied with the preceding. The differences are stated above. Sierra Leone (and ? Uganda).

*leonensis*. **E. leonensis** *Baker* (= *leona Baker*) seems to differ from *pinodoides* only by a lustrous slate-coloured under surface and by the black median stripe extended to the posterior margin on the forewing beneath. In the ♀ both wings are above monotonously dark brown without markings; both wings beneath ochreous-yellow, the forewing with a black longitudinal stripe and two small, whitish discal spots. 34 to 41 mm. Sierra Leone.

*sublustris*. **E. sublustris** *Baker.* „Forewing dark brown, the first two thirds covered with a very dark blue colour, the blue colour exhibiting a peculiar lustre, as of a dark Indigo having become oily; hindwing of a bright dark blue with broad, dark margins, the veins 2 to 4 black, particularly vein 4, which is black as far as the base. Both wings beneath greyish-brown; forewing at the posterior margin whitish and before the latter as far as vein 5 blackish with two whitish discal spots at the anterior margin of the black colour. Hindwing beneath monotonously greyish-brown with traces of a postmedian row of spots. — ♀. Both wings above monotonously dark brown without markings; the under surface as in the ♂. Expanse of wings: 34 to 36 mm.“ Sierra Leone.

*benitensis*. **E. benitensis** *Holl.*, according to HOLLAND, only deviates from *E. rezia* by the black longitudinal ray on the hindwing above. Ogowe River.

*pinodes*. **E. pinodes** *Ham. Druce.* (65 a). Both wings above blackish-brown without markings, in the ♂ with a faint blue reflection; beneath light yellowish-brown; forewing with a sharply defined, jet-black discal stripe distally strongly expanded; hindwing with two postmedian transverse rows of yellowish spots. Sierra Leone to Lagos.



**E. nigra** Baker. Both wings above blackish-brown (♂) or brown (♀). Hindwing unmarked; forewing *nigra*. in the ♂ feebly scaled blue at the posterior angle of the cell and in 1 b and 2, in the ♀ unmarked. Wings beneath dull greyish-brown (♂) or ochreous-yellow (♀) without any other marking but the black longitudinal stripe of the forewing. 41 to 43 mm. Sierra Leone.

**E. adolphi friderici** A. Schultze (65 b) ♂. Forewing above dull black with a faint bluish reflection; *adolphi friderici*. in the areas 1 to 4 an anteriorly strongly narrowed median band formed of bluish-white, not distinctly defined discal spots, not filling up the bases of the areas; at the end of the discal cell a small, faded, bluish-white spot; of the same colour is a subapical band composed of single spots in the areas 4 to 6; beneath dull black with the corresponding markings above, which, however, are somewhat more extensive and of a dirty yellowish-white colour; the subapical band passes through the densely white-dusted veins and internerval folds into the margin. Hindwing above white, at the base dusted with a greyish blue and with a black marginal band of 5 to 6 mm width; the veins are more or less dusted black; beneath dirty yellowish-white, at the margin dusted blackish; this dark marginal band is radiately interrupted by the black veins bordered with white and the broad, white dusting of the internerval folds; terminal vein of the discal cell distinctly dusted black. In the ♀ all the white markings are more extensive and somewhat more distinctly defined. Dr. ARNOLD SCHULTZE found numerous, newly emerged specimens of this species in the primeval forest near Yukaduma in South Cameroon. The pupal integuments were brown with black macular markings and, in their shape and the way of the fastening of the radiatingly projecting wreath of bristles at the anus, they resembled the pupae of *Hewitsonia*. The pupae were arranged in small colonies on the under surface of leaves.

**E. ernesti** Karsch (65 a). ♂. Wings above dull blue with a somewhat silvery shade; hindwing with *ernesti*. a dark grey costal-marginal band of  $1\frac{1}{2}$  mm width extending in a flat bow through the anterior apical half of the cell to vein 3, then to the middle of area 1 b parallel with the margin and finally slantingly to the posterior margin, where it is only 2 mm broad; posterior margin long-haired; fringes white. Hindwing above with a grey costal margin of 4 mm width and a marginal band of 2 mm width, ending pointedly in the area 2; anal angle extended into a point. Both wings beneath silvery white with a light yellow costal margin and black marginal dots at the ends of the veins. In the ♀ both wings are above white, at the bases dusted blue; forewing at the costal margin, apex and distal margin broadly blackish-brown; hindwing with a blackish-brown marginal band ending into a point behind at vein 2; wings beneath purely white, at the costal margin of the forewing narrowly ochreous-yellow and at the distal margin faintly dusted brownish. Togo Land.

## 28. Genus: **Hewitsonia** Ky.

The *Hewitsonia* are large and beautiful Liptenins with a very peculiar marking beneath. The forewing is beneath blackish-brown, the costal margin as far as the footstalk of the veins 7 to 9 and a very large apical spot yellowish with black veins and black streaks on the internerval folds. Hindwing beneath light yellowish or almost white with dark longitudinal streaks at the margin, covering either the veins or extending closely near to them and being inwardly combined by twos in the shape of arches; besides there are dark streaks at the margin on the internerval folds and 6 dark transverse lines, the two first of which extend directly from the base of the wing towards the costal margin, whilst the 3 following ones begin near the proximal margin, the last one extending between the posterior angle of the cell and the costal margin; the fourth is always the shortest and extends only from vein 1 b to the beginning of vein 2; the transverse lines are more or less irregular and sometimes broken up into dots or streaks.

Above the sexes are not at all alike. In the ♂ the forewing shows blue spots at the anal angle in the areas (1 a), 1 b and 2, and a bluish-white subapical band of 4 to 5 spots of the areas 4 to 6, 9 and 10, in the ♀ the subapical band is yellow, and at the anal angle there is only a yellowish spot in 1 b or in 2. The hindwing is in the ♂, at least in the marginal part of the areas 2 to 5, blue, whilst in the ♀ it is one-coloured dark brown without any marking.

The larvae are long-stretched with long, lateral hair-pencils. Pupae rather stout and squat, in the abdominal region above very concave; sides with a sharp margin; dorsum with short, stiff bristles; at the anal end surrounded by the radiately extending, long hair of the shed larval skin, the separate ventral joints with long, fine, black hair negotiating the transition between the pupa and the hair of the larval skin.

## Review of the Species.

- A. The area 2 of the forewing beneath one-coloured without a light spot or only at the margin light coloured. In the ♀ the longish, yellow spot is situate at the anal angle of the forewing above in the area 1 b.
- α. The second and third black transverse lines of the hindwing beneath are coherent. Hindwing beneath at the base of the areas 2, 6 and 7 orange-yellow. *H. boisduvali*.
- β. The second and third transverse lines of the hindwing beneath each broken up into 4 or 5 spots. Hindwing beneath partly, especially in the areas 6 and 7 and on the distal side of the fifth transverse line in 1 b to 2 reddish-brown. *H. similis*.
- B. The area 2 of the forewing beneath in the middle with a large, light spot. Hindwing beneath marked almost the same as in *similis*. In the ♀ the longish, yellow spot is situate at the anal angle of the forewing above in the area 2. *H. kirbyi*.

*boisduvali*.

**H. boisduvali** *Hew.* (64 f) ♂. Wings above blackish with a light blue, white-spotted subapical band and a large, blue spot at the anal angle in 1 a to 2 of the forewing and a large, blue spot at the margin of the hindwing, entirely covering the areas 2 to 4 and a part of the areas 5 and 6, and separated from the margin by a black line. In the ♀ the forewing above shows a light yellow subapical band of 5 mm width and a longish, light yellow spot in 1 b near the anal angle. Ashanti to the Southern Congo District.

*similis*.

**H. similis** *Auriv.* only deviates from *boisduvali* by the marks beneath mentioned in the review. The ♂ is unknown to me. Gabun.

*kirbyi*.

**H. kirbyi** *Dew.* (64 f). In the ♂ the forewing above has a blue spot in the middle of 1 b and another one behind the middle of 2, not or scarcely touching each other; the subapical band is white and consists only of small spots of the areas 5, 6, 9 and 10; the blue colouring of the hindwing above is more extensive and covers also the area 1 c as far as the base. In the ♀ the forewing above shows a very slanting, yellow subapical band of almost 5 mm width, nearly reaching the margin in area 4, and a long large spot in area 2; sometimes there also occurs a small yellow spot in 1 b. — Larva yellowish grey with a black head, everywhere covered with extremely fine and short hair; each joint has a lateral fleshy cone covered with a pencil of long grey hair; the first joint and the last moreover with a dorsal pencil, and the sixth joint with two very small, white brushes. Pupa grey, above strewn with minute black dots; sheaths of the wings marbled dark. Professor SJÖSTEDT found the pupae in Cameroon on the whitish-grey, somewhat spotted bark of a tree, where they were difficult to discover. Cameroon to Angola.

29. Genus: **Powellana** *Baker*.

This genus is closely allied with the two last genera in the neuration, but it differs from all the other Liptenins by the veins 10 and 11 of the forewing being petioled together. The antennae scarcely reach the middle of the costal margin of the forewing and are slender with a slightly thickened cylindrical club. Wings broad with a feebly bent distal margin and a strongly bent costal margin of the hindwing.

*cottoni*.

**P. cottoni** *Baker* (= *weberi* *Holl.*) (64 g) ♂. Wings above of a bright blue; the apex and margin of the forewing is 4 mm broad black; the costal margin of the forewing and distal margin of the hindwing is scarcely more than 1 mm broad black; sometimes the forewing has a white subapical spot in 5 and the hindwing one in 6; the dark bands beneath show through on both wings; the under surface of both wings is white with 7 or 8 dark transverse bands or lines, the arrangement of which is best to be seen from the figure; the third and fourth are at their ends more or less connected with each other. In the ♀ the wings are broader, above brown with a faint blue reflection, and have a white transverse band extending from the middle of the costal margin of the forewing almost to the anal angle of the hindwing. Cameroon to the Congo District.



## 2. Subfamily: *Lycaeninae*.

The differences between the *Lipteninae* and *Lycaeninae* are stated above on p. 297.

The *Lycaeninae* form a division more abounding in species and occurring in all the parts of the world, being represented everywhere in the Ethiopian region. Most numerous, however, they are in South Africa.

The great number of genera belonging hereto may be divided at least in 5 groups.

### Review of the Groups of Genera.

- I. The first joint of all the tarsi is depressed and at least twice as long as the other joints together. The hindwing with a long precostal vein turned round towards the base. Palpi extremely long, projecting far beyond the head. Eyes bare. First group of genera.
- II. The first joint of the tarsi cylindrical and of a normal length. Hindwing without the precostal vein.
  - A. All the legs as far as the second foot-joint densely long-haired. Eyes hairy. Hindwing rounded off without any corners or small tails. Second group of genera.
  - B. At least the tibiae and tarsi with appressed scales without any long hair; very rarely hairy, the eyes, however, in this case bare.
    - α. Hindwing at the end of vein 1 b lobate, tailed or angled, rarely almost rounded off, but then the antennae short, strong, gradually thickened with an indistinctly deposited circular club. The proximal margin of the hindwing almost invariably more or less excised between the veins 1 a and 1 b.
      - \*. Hindwing at the end of vein 1 b on the proximal side with a very distinct lobe turned backward, but without any small tail at all; at vein 2, however, tailed. Eyes densely haired. Forewing always with 11 veins, 7 and 8 rising on a long footstalk. Third group of genera.
      - \*\*. Hindwing at the end of vein 1 b tailed and generally also lobate (the lobe, however, turned proximad not backward), rarely rounded off without a lobe or small tail. Fourth group of genera.
    - β. Hindwing at the end of vein 1 b rounded off and generally less prominent than at vein 2, never lobate tailed or angled at vein 1 b, with a fine hair-tuft at most. Proximal margin of hindwing straight or a little convex, rarely feebly emarginated between the veins 1 a and 1 b. Antennae very fine, their shaft with long distinct joints and with a more or less depressed club. Fifth group of genera.

### First Group of Genera.

This group is in Africa only represented by a single genus. Vein 6 of forewing rises from the footstalk of 7 and 8, vein 9 being absent; veins 10 and 11 separately from the costal margin of the cell.

Antennae rather strongly built; the shaft indistinctly jointed and the club very little thickened, circular. Palpi very long, 3 or 4 times as long as the head, compressed and with appressed scales. Eyes bare. Legs with appressed scales. Forewing with 11 veins; vein 5 from the middle of the almost straight transverse vein of the discal cell; the veins 3 and 4 of both wings almost from the same place; veins 6 and 7 of the hindwing from the same place or rather remote from each other.

### 1. Genus: *Megalopalpus* Röber.

The sexes are similarly coloured, but distinguished by the margin of the hindwing being in the ♂ almost entirely rounded off, in the ♀, however, in the middle (at the end of vein 5) broad and obtuse.

All the species are above white, the costal margin and apical part of the forewing being black.

Mr. W. A. LAMBORN has recently discovered the habits of the larvae of *Megalopalpus*. They are carnivora feeding on little species of the Jassids and Membracids which they grasp with their forelegs. The Homoptera-larvae are visited and protected by the ants of the genus *Pheidole*. The ants, however, seem not or only little to care for the larvae of *Megalopalpus*.

## Review of the Species.

- A. The under surface of the forewing at the costal margin (being very broad as far as the median) and at the apex yellowish-brown; hindwing beneath with transverse rows of spots which are scarcely darker than the ground and therefore distinctly prominent only by their fine whitish bordering; sometimes the under surface is whitish and almost unspotted. The broadest and most distinct of these transverse rows is situate somewhat behind the middle and forms a complete bow between the anal angle and the costal margin. First tarsal joint rather narrow.
- α. Hindwing above with a black marginal band of 3 to 5 mm width, not being interrupted in the middle.
- \*. Margin of forewing complete or almost complete. *M. zymna*.
- \*\*. Margin of forewing distinctly undulate. *M. angulosus*.
- β. Marginal band of hindwing above 2 to 3 mm broad at most, in the middle very narrow or entirely interrupted. *M. simplex*.
- B. The under surface of the forewing only at the apex somewhat darkened; hindwing beneath with 3 or 4 irregular, dark brown transverse bands being very prominent on the lighter ground. Hindwing above uni-coloured white with brownish fringes or with a fine black marginal line between the veins 1 b and 5, or with a narrow dark marginal band. First tarsal joint much broader and more flattened. *M. metaleucus*.

*zymna*. **M. zymna** *Dbl. & Hew.* (65 f). Costal margin of forewing above as far as the discal cell dark brown. *pallida*. Hindwing beneath light brown with very indistinct light transverse lines. Ashanti to Gabun. — **pallida** *j. nov.* A ♂ lying before me from Ruwenzori deviates by the costal margin of the forewing being above white with small oblong black spots at the costal margin itself and by both wings being beneath whitish without distinct spots. — LAMBORN describes the larva to be bark-coloured brown with a hard skin above, densely covered with stiff-haired tubercles. It partly lives on the Jassid *Nehela ornata* *Dist.* partly on Membracids of the genera *Leptocentrus*, *Anchon* and *Gargara* all of which are visited by the ant *Pheidole Aurivillii* v. *kasaiensis*. LAMBORN reports that the same larva does not attack different Homoptera. But as he does not seem to have always bred the lepidoptera, it may be possible that there were among the larvae also some of the other closely allied species.

*angulosus*. **M. angulosus** *Grünb.* is unknown to me, but it is evidently very closely allied to the preceding. The description says: „Allied with *M. zymna* *Dbl. & Hew.*, somewhat larger, of different contours of the wings; ♂ wings longer, narrower, elliptical, particularly the hindwings, which form a rounded angle at vein 5; margin of forewing distinctly feebly undulate; forewing of the ♀ broader, at the apex almost rectangularly angled, the margin more distinctly undulate; hindwing at vein 5 extended into a lobe, almost lancet-shaped, the anterior part of the margin at vein 6 flatly indented. Marking above as in *zymna*, the broad black apical spot of the forewing fills up the whole apical half and encloses the upper cell-angle. The black margin of the hindwing is in the ♂  $2\frac{1}{2}$ , in the ♀ up to 5 mm broad. Under surface very much like in *zymna*, the bands scarcely darker than the greyish-brown ground-colour, the white arcuate border-lines more or less distinct, the post-discal band in the area 5 rectangularly broken, the distal, white, boundary-bow in this area removed far distally. Expanse of wings:  $38\frac{1}{2}$  to  $43\frac{1}{2}$  mm.“ Spanish Guinea.

*simplex*. **M. simplex** *Röb.* (= *similis* *Ky.*) (62 h) is perhaps a race of *zymna* and deviates only by the marks stated in the review. Cameroon to Uganda.

*metaleucus*. **M. metaleucus** *Karsch* (65 f) is easily recognizable by the marking of the hindwings above and beneath. Ashanti to Cameroon.

## Second Group of Genera.

This group likewise comprises but one genus having no allies, neither in Africa nor in other regions.

2. Genus: **Lachnocnema** *Trim.*

Small or medium-sized Lycaenids, the hindwings of which are rounded off without any angles or small tails. Forewing with a distinctly undulate, sometimes almost dentate margin. Antennae stout with short joints of the shaft and a gradually thickened circular club. Palpi moderately long, beneath roughly scaled. Eyes densely haired. Forewing with 11, hindwing with 5 veins; vein 5 rises in both wings from the middle between 4 and 6; vein 6 and the footstalk of the veins 7 and 8 of the forewing from the same place, the apex of the cell; vein 9 of the forewing is absent, and veins 10 and 11 rise separately from the costal margin of the cell; veins 6 and 7 of the hindwing separated afar. The forelegs of the ♂ are, as in *Arrugia*, completely developed with jointed tarsi.



By the marking on the hindwings beneath the species are easily discernible from all the others; they exhibit there several brown or blackish spots arranged in transverse rows, strewn or encircled with lustrous, silvery or lead-coloured scales. The ♂♂ are above uni-coloured dark brown or blackish-brown, the ♀♀, however, in the disc of both wings more or less whitish or yellowish. The species are closely allied to each other and as yet incompletely known.

The larvae are carnivorous, living on Homoptera-larvae, and are accompanied by ants.

#### Review of the Species.

##### A. Small species with an expanse of wings of 15 to 30 mm.

α. Median transverse band of hindwing beneath irregular, at the costal margin expanded, sometimes broken up into spots or entirely absent.

\*. Median transverse band of hindwing beneath complete and coherent or only little interrupted. The discal spots of the hindwing beneath are at least just as distant from the submarginal spots as from the discal spots.

†. The discal spots of the hindwing beneath are arranged in a coherent, almost straight or slightly bent row between the proximal margin and vein 6. — ♀. Both wings above with a large or small, white, well defined discal area; forewing at the end of the discal cell with a large, rectangular, black median spot. *L. bibulus*.

††. The discal spots of the areas 2 and 3 on the hindwing beneath are situate much nearer at the base than those of the areas 4 and 5; the row is thereby interrupted or very much bent like an S. — ♂. Wings above lighter brown. — ♀. Both wings above brownish-grey, in the middle somewhat lighter, but without a light area; forewing only with a small streak-shaped discal dot. *L. durbani*.

\*\* . Median transverse band of hindwing beneath absent and only represented by a spot at the costal margin and another on the transverse vein of the discal cell. The discal spots are situate much nearer at the submarginal spots than at the discal cell. — ♀. Hindwing above as far as the costal margin and almost to the base white with a black marginal band of about 3 mm width.

*L. exigua*.

β. Median transverse band of hindwing beneath straight and almost equally broad. The discal spots of the areas 1 c to 5 in the middle between the median band and the submarginal spots or nearer at the median band. — ♀. Wings above dark with a small square whitish spot near the base of the areas 4 and 5 of the forewing. *L. brimo*.

##### B. Larger species with an expanse of wings of 38 to 46 mm.

α. ♀. Forewing above with a white longitudinal spot covering the posterior margin of the discal cell and the base of the areas 1 b to 3. Hindwing above with a broad white transverse band from the proximal margin to vein 6. *L. magna*.

*L. busoga*.

β. ♀. Both wings above behind the apex of the discal cell with a yellow transverse band which on the forewing does not cover the base of the areas 2 and 3. *L. reutlinger*.

*L. buna*.

**L. bibulus** F. (= *emperamus* Snell.) (65 g). ♂. Both wings above uni-coloured dark brown without any markings; fringes of hindwings very undulatingly edged; wings beneath with a greyish-brown ground-colour and deep red-brown spots strewn with silvery scales, which are arranged as in the ♀. — ♀. Both wings above with a white discal area or a transverse band extending from the proximal margin to vein 6 or sometimes only covering the base of the areas 4 and 5, in which case the areas 1 c to 3 are more or less covered with a greyish blue; at the end of the discal cell on the forewing always a large angular black spot. Beneath the wings are white in the middle and exhibit the same dark spots decorated with silvery scales, by which all the species of the genus are distinguished; their arrangement may be seen from the figures. LAMBORN discovered the larva in Nigeria living on larvae of a Homoptera, *Ossana bicolor* Dist., but he does not describe it. Nigeria to the Cape Colony, East Africa and Uganda.

**L. durbani** Trim. (65 g). The ♂ is very much like the ♂ of *bibulus*, but above somewhat lighter and beneath distinguished by the marks stated in the review. The ♀ is above light brownish-grey, somewhat darker at the margins; the forewing only shows a small black dot at the end of the cell; beneath as in the ♂. Cape Colony to Brit. East Africa.



- exigua.* **L. exigua** Holl. (65 g) is known only in the female. Forewing above black with a large, white spot on the posterior margin, reaching anteriorly narrowed to vein 6; hindwing above white with a black marginal band of 3 mm width. Wings beneath almost white; forewing at the costal and distal margins darkened and with the usual silvery spots, though without a dark discal dot; hindwing with three silvery spots at the costal margin and behind the middle with discal spots in 1 c to 5, which are situate close in front of the submarginal dots; the other spots are absent or there are only faint traces of them. On the Ogowe and Kuilu Rivers.
- brimo.* **L. brimo** Karsch. (= *sudanica* Auriv.) (65 g). Fringes of forewing scarcely undulate, white with dark spots at the ends of the veins. ♂. Wings above uni-coloured dark brown. ♀. Forewing above with a small, light spot behind the apex of the cell. Beneath distinguished by the marks stated in the review of the species. Togo and Nigeria.
- magna.* **L. magna** Auriv. (65 g). ♂ (= *umbra* Smith). Wings above uni-coloured blackish-brown without markings; fringes of forewings deeply undulate, almost dentate; beneath with a brown or yellowish-brown ground-colour and the usual red-brown spots covered with silvery scales; the discal spots of the hindwings irregularly arranged and approaching the margin. The ♀ (= *nivens* Ham. Druce) is described in the review and easily recognizable by the sharply defined, white areas above. Cameroon and Congo District.
- divergens.* **L. divergens** Gaede (65 h) has remained unknown to me. The description says: „Somewhat smaller than *L. magna* Auriv. and above not different from it; beneath somewhat lighter brown and at once distinguishable from *magna* or other similar species by the bands of the hindwings being differently arranged; in *divergens* the most distal of the three spots extends at the costal margin at vein 6 between the median and distal bands, whereas in *magna* it is situate on the median band. Expanse of wings: 30 mm.“ As we do not yet know the limits of variation in the species of *Lachnocnema* and especially in *magna*, it is impossible to say whether *divergens* is a distinct species or only an aberration of *magna*. In *bibulus* the position of the said spot is variable. Cameroon, captured by Dr. MILDBRAED near Dengdeng.
- busoga.* **L. busoga** Baker is described according to a ♀ and seems scarcely to deviate from the ♀ of *L. magna* (65 g). The description at least does not mention any important differences: „Both wings blackish-brown with a large white discal area; forewing with the white area beginning almost at the base, distally quickly expanded as far as the last quarter of the wing and extended from vein 1 almost to the costal margin of the cell; hindwing with a very large white area extending from the proximal margin to vein 6 and from the middle of the cell almost to the margin. Forewing beneath white with a brown, broad costal and distal margin; a small spot before the apex, posteriorly accompanied by a larger, slanting spot; costal margin and apex with groups of silvery scales. Hindwing beneath white, at the costal margin as far as the last quarter with a very large, sharply defined, almost square spot showing in the middle a slanting white streak; at the base 1 or 2 white spots curled silvery brown, and in the middle a transverse row of similar spots; an indistinct postmedian row of 4 or 5 similar spots; margin broadly darkened. Expanse of wings: 46 mm.“ Busoga.
- reutlingeri.* **L. reutlingeri** Holl. (65 h). ♂ unknown. In the ♀ the wings are above blackish-brown with a pale yellow median transverse band extending from vein 1 to vein 6 of the forewing and from vein 1 c to vein 6 of the hindwing; the transverse band of the forewing is narrowed in the areas 2 and 3 and does not cover the base of these areas, the transverse band of the hindwing is about 4 mm broad. The marking beneath is most distinctly to be seen from the figure. Benita. — **luna** Ham. Druce (65 h) only deviates by the transverse bands above being darker yellow and that of the hindwing being 6 mm broad, and it is probably only a variation of *reutlingeri*. Cameroon.

### Third Group of Genera.

The forms of this group are very easily discernible from all the other Lycaenids by the formation of the hindwings which, at the anal angle at the end of vein 1 c, exhibit a distinct lobe turned backward, but no small tail; at the end of vein 2, however, they are tailed and at the veins 3 and 4 more or less dentate, angled or tailed.

In the neuration all the species agree; the forewing has only 11 veins, vein 9 being absent; vein 5 rises in the middle between 4 and 6; the latter from the same place as the footstalk of 7 and 8; 10 and 11 quite separately from the costal margin of the discal cell; in the hindwing vein 5 rises in the middle between 4 and 6, and the veins 6 and 7 are rather remote from each other at their rise. Eyes densely haired. Palpi with appressed scales and a thin terminal joint. Antennal shaft thin, often as fine as a hair, with long, distinct joints; club circular and long, rather distinctly defined.

The males are often distinguished by mealy spots or hair-pencils, whereupon several genera have been founded. But as the females of these „genera“ cannot be distinguished by any marks at all, I regard them as subordinate genera or groups of species at most.

The stages of development are very little known; the larvae have the usual shape of the body of the Lycaenid larvae, and sometimes live in the interior of fruits.



3. Genus: **Deudorix** Hew.

The numerous Ethiopian species of the genus *Deudorix* can be divided into four groups chiefly according to the colouring and marking.

## Review of the Groups of Species.

- I. Wings beneath monotonously yellow, except at the anal angle of the hindwing without or with indistinct markings. — ♂. Hair-pencil, mealy spots or other marks are absent. — *Hypomyrina* Druce.  
First group.
- II. Wings beneath never coloured or marked as in the first division. — ♂. Hindwing above in area 7 or in 6 and 7 at the costal margin of the discal cell with a distinct mealy spot.
  - A. Wings beneath with a greyish-green or green ground-colour, in the basal part at least as far as the apex of the discal cell without markings. — ♂. Forewing beneath with a hair-pencil at the posterior margin. — *Actis* Karsch + *Kopelates* Druce.  
Second group.
  - B. The ground-colour beneath not green or greenish.
    - α. Wings beneath beyond the middle white without markings, but then with a common yellow or brown, black-edged, or black, coherent, straight or almost straight transverse band. — *Hypokopelates* Druce.  
Third group.
    - β. Wings beneath not white, generally grey or blackish, or if white or whitish without a coherent transverse band of the hindwing or with distinct markings in the basal half.  
Fourth group.

## First Group of Species.

All the species are comparatively small with an expanse of wings of 22 to 26 mm. Frons usually dark with white lateral margins and a white median line in the upper part, rarely almost quite white. Hindwing at vein 3 angled or dentate, but not tailed. Wings beneath monotonously yellow without or with indistinct markings; hindwing, however, beneath at the margin in the areas 1 c and 2 with two very similar, black moon-spots strewn with blue scales. Forewing above black with an orange-yellow spot on the posterior margin.

## Review of the Species.

- A. Hindwing above orange, at the base only narrowly black, at the proximal margin as far as vein 1 b blackish and with a very fine, black marginal line between the anal angle and vein 6.
  - α. The orange spot of the posterior margin of the forewing is very large and reaches at least to vein 4.  
*D. nomenia*.
  - β. The orange spot of the posterior margin of the forewing reaches to vein 2 at most. *D. nomion*.
- B. Hindwing above at the base almost to the end of the discal cell black, then orange as in division A. The spot of the posterior margin of the forewing large, reaching at least to vein 4. *D. acares*.

**D. nomenia** Hew. (65 i) is fully described above in the review. Sierra Leone to Congo.

*nomenia*.

**D. nomion** Stgr. (65 i) only deviates from *nomenia* by the marks already stated and may be merely a *nomion* form of it. Sierra Leone.

**D. acares** Karsch is also very much like the two preceding species and only discernible from *nomenia acares* by the larger extent of the black colour at the base of the upper surface. Togo and Nigeria. — Perhaps the ♀ of *nomenia*?

## Second Group of Species.

This group corresponds to the „genera“ *Kopelates* Druce and *Actis* Karsch, which cannot be distinguished from each other; for the statement by KARSCH, that the forewings of the ♂♂ in *Actis* are without a pencil on the under surface of the costal margin, is not correct. Frons black with fine white lateral margins and generally also with a white dot or a small streak above in the middle. Hindwing at the end of vein 3 angled without a tail.

## Review of the Species.

- A. Wings above with a broad, common, orange median band extending from vein 1 b of the hindwing to vein 5 of the forewing and appearing also beneath, where it is bordered with white, almost reaching to the proximal margin of the hindwing and to the costal margin of the forewing. *D. perigrapha*.
- B. At least the forewing above without any orange colouring.
- α. Hindwing above with a yellow longitudinal stripe at the costal margin (chiefly in area 6), beneath with a rounded light costal-marginal spot. *D. mimeta*.
- β. Hindwing above without a yellow longitudinal stripe and beneath without a light costal-marginal spot.
- \*. ♂. Both wings above with several greenish blue longitudinal stripes following the veins. ♀. Wings above dull smoky brown or almost black. *D. virgata*.
- \*\*.

- ♂. Both wings above almost to the margin uni-coloured cyaneous with a fine black transverse streak at the cell-end. ♀ unknown. *D. ula*.

*perigrapha*.

**D. perigrapha** Karsch (65 h) is distinguished by the greyish-green ground-colour and the yellow median band being beneath bordered with white. Apparently rare and hitherto only found in South Cameroon and in the Congo District. The ♂ is unknown to me. — **unda** Gaede. „On the hindwing above the orange median band appears dentate distally on the veins; beneath the median band of the forewing is much broader towards the costal margin, its edges are almost parallel, whereas in *perigrapha* the shape is almost triangular; behind the band is not dentate, but at the proximal margin somewhat broader than in *perigrapha*. Expanse: 26 mm.“ Cameroon near Dengdeng.

*mimeta*.

**D. mimeta** Karsch (65 h). Wings above black; forewing with single, small blue scales at the costal margin, at the median, at the posterior margin, and at the distal margin; hindwing at the costal margin with a yellow longitudinal stripe which, however, does not reach the base and vein 5, in 1 a and 1 b and 1 c dusted with blue. Wings beneath dark verdigris; in the forewing with 3 short transverse streaks at the cell-end, and 2 often indistinct, delicate, undulate, whitish transverse lines, beyond the middle; hindwing beneath with a roundish, light spot between the costal margin and vein 4, followed behind as far as the proximal margin by a yellow zigzag line edged with black and white; before the black anal lobe with an arcuate row of yellow scales touching distally some blue ones; area 1 c at the margin black with a whitish marginal line and strewn with blue and yellow scales; area 2 with a large, black marginal spot proximad bordered with yellow; area 3 with a smaller marginal spot dusted with blue. South Cameroon to the Congo District in the primeval forests as far as the 6th degree of southern latitude. — It may be the ♂ of *perigrapha*?

*virgata*.

**D. virgata** Ham. Druce (65 k). Wings above jet-black with bright bluish-green stripes along the veins; hindwing at the costal margin broadly blackish-brown; anal lobes and small tails black. Wings beneath verdigris behind the middle with two parallel, serpentine, fine white transverse lines which are often indistinct or absent on the forewings; hindwing with a black anal lobe and a large black marginal spot in area 2. In the ♀ the wings are above dull smoky brown or black. Sierra Leone.

*ula*.

**D. ula** Karsch (65 h). ♂. Wings above beautifully cyaneous; costal margin, apex, and distal margin of forewing narrowly black; hindwing at the costal margin in the areas 7 and 6 black, and at the proximal margin in 1 a and 1 b black or blackish-grey with or without blue scales; on both wings we sometimes notice black longitudinal streaks at the margin on the internerval folds. Abdomen with light, above blue, beneath white transverse rings. ♀ unknown. South Cameroon and Congo District.

## Third Group of Species.

The species of this group are easily recognizable by the snow-white and beyond the middle entirely unmarked under surface of both wings. The marking beneath very much recalls that of the species of *Hypolycaena*, and HEWITSON in fact described them as *Hypolycaena*. In the ♂♂ the wings are generally above of a beautiful blue colour. The ♀♀ are rarely scaled light blue above, generally blackish-brown and white without any blue or red colouring.

## Review of the Species.

- A. Hindwing at the end of vein 3 only angled, without any tail-appendage.
- α. The postdiscal transverse band on the forewing beneath is equally broad (about 2 mm) and extends quite freely to the costal margin. Anal lobe of hindwing above scaled red.



\*. ♂. Hindwing above with a large, brownish-red spot almost entirely covering the areas 1 b to 4; also the forewing generally above with a small, similar spot on the posterior margin. Frons black with white lateral margins. Forewing beneath at the base in area 1 b with a large black longitudinal spot. Hair-pencil on the forewing beneath dark brown. *D. aruma*.

\*\*.

♂. Hindwing above as far as the margin sealed blue; forewing above in the basal half for the greatest part blue. *D. mera*.

α. The postdiscal transverse band on the forewing beneath is expanded towards the costal margin (where it is about 4 to 5 mm broad) or entirely united with the black marginal band — ♂. Wings above for the greatest part blue.

\*. The black postdiscal band on the forewing beneath is only at the costal margin united with the dark marginal band, otherwise broadly separated from it by the white ground-colour. Anal lobe of hindwing above without red scales. — ♂. Forewing above without a black mealy spot. — ♀. The small tail at vein 2 of hindwing long and very broad, white. *D. angelita*.

\*\*.

The brownish postdiscal band bordered with dark on the forewing beneath is entirely united with the blackish-grey marginal band. Anal lobe of hindwing above scaled red. Frons white, above hues orange. — ♂. Forewing above behind the discal cell with a very large, round, black mealy spot. — ♀ unknown.

1. ♂. The large mealy spot on the forewing above does not reach the black marginal band. *D. otraeda*.

2. ♂. The large mealy spot on the forewing above reaches the black marginal band. *D. leonina*.

B. Hindwing at the end of vein 3 with a distinct small tail. The transverse band on the forewing beneath is situated almost in the middle, being equally broad and generally yellowish. Frons white, above with two short dark streaks (whether this is also the case in *ituri* and *elealodes*?). — ♂. Forewing beneath with a black longitudinal spot in the basal part of area 1 b; hindwing above with a black hair-pencil in area 1 e.

α. Transverse band of forewing beneath at least 2 mm broad and yellowish. — ♂. Hair-pencil of forewing beneath white or light yellow.

\*. Forewing above far beyond the discal cell (almost as far as the middle of area 4) densely sealed blue; hindwing above as far as the margin blue. — ♀. Wings above at least to the middle sealed light bluish. *D. eleala*.

\*\*.

♂. Forewing above only as far as the end of the discal cell thinly strewn with blue scales or unicoloured blackish-brown without blue scales.

1. ♂. Both wings above strewn with blue scales; hindwing above without a mealy spot in area 1 c. *D. obscura*.

2. Wings above without any blue scales at all; hindwing above about in the middle of area 1 e with a small, light mealy spot. *D. fusca*.

β. The median transverse band of the forewing beneath very narrow, linear and light yellow. Wings beneath at the margin not darkened. — ♂. Hair-pencil at the posterior margin of the forewing beneath black. *D. elealodes*.

**D. aruma** Hew. (65 i). Frons black with white lateral margins. ♂ wings above black; forewing with a small red spot near the base in the areas 1 a and 1 b; hindwing with a large, red, almost triangular spot almost covering the areas 1 c to 4 and covering the anal lobe and a part of the cell. Wings beneath marked almost as in *eleala*. Hair-pencil of hindwing beneath black. ♀ unknown to me. Cameroon to Gabun. — In var. **simplex** Schultze the red spot of the forewing is absent. Belgian Congo. — GAEDE describes as ♀ of *aruma simplex* a form which on the upper surface seems entirely to correspond with *D. bimaculata* Hew. (see below), but which is much smaller, only 20 mm.

**D. mera** Hew. (65 i). ♂. Wings above blue; forewing at the costal margin narrowly, at the apex broadly black, at the margin as far as the anal angle gradually narrower black; besides with a black spot in the cell and at the cell-end; veins finely black. Anal lobe of hindwing above scaled red. Wings beneath white with an almost straight yellow transverse band, the distal side of which is 3 mm distant from the costal margin on the hindwing; forewing at the margin rather broadly darkened; hindwing there little darkened, with a black marginal spot encircled with yellow in the area 2. Cameroon to Angola.

**D. angelita** Suff. (65 i) was described according to the ♀ figured here. Frons white. Wings above blackish-brown with a faint blue reflection; hindwing between the anal angle and vein 5 or 6 with a fine black marginal line, a white line in front of it, a row of submarginal black bows and within them with a transverse



band of white spots; at vein 2 a small, broad tail 10 to 12 mm long. Wings beneath purely white; forewing with a postmedian black transverse band and a dark marginal band of almost 3 mm width, parted by 2 white lines; hindwing with a black submarginal band parallel to the margin, and a fine, black marginal line; between them with black spots in 1 c, 2 and 5. South Cameroon. The following two forms presumably certainly belong to *angelita*; but I do not possess sufficient material in order to decide whether they are to be regarded as races

*makala*. or only as individual variations. — **makala** Baker (65 k). ♂. Wings above beautifully blue; forewing at the costal and distal margins black; beneath almost entirely as in the typical ♀; the transverse bands of the forewing, however, at the costal margin broader. Congo District near Makala. Ruwenzori. — **schultzei** Auriv. (65 k). Frons black with white lateral margins. ♂. Wings above as in *makala* of a beautiful blue; costal and distal margins of forewings narrower black; marginal band of forewing beneath only about 1½ mm broad, entirely undivided; hindwing beneath with a blackish, about 2 mm broad marginal band in which there are small, black, white-curved dots of the areas 3 to 7. In the ♀ the white submarginal band scarcely extends beyond vein 3 and is much narrower than in the principal form; the small tail at vein 2 is only about 8 mm long. If SUFFERT's statement about the colour of the forehead in *angelita* is correct, *schultzei* is probably a distinct species. Cameroon near Mangeme; discovered by Capt. A. SCHULTZE.

*otraeda*. **D. otraeda** Hew. (66 a). ♂. Wings above blue; costal and distal margins of forewing narrow, apex somewhat broader black; in the middle a round, black mealy spot covering the base of the area 2 to 5 and all round encircled by the blue colour. Hindwing between the veins 1 c and 6 almost as far as the base blue, otherwise black. Beneath white with a dark marginal band which on the forewing is entirely united with the postdiscal transverse band. The ♀ is not described and unknown to me. Sierra Leone to Congo.

*leonina*. **D. leonina** Baker only differs from *otraeda* by the blue colour of the forewings above being less extensive and the black marginal band being thereby broader; the round mealy spot is distally united with the black marginal band; all the veins are distinctly black. On the hindwing the blue colour scarcely extends beyond vein 5 and the veins are black. ♀ unknown. Sierra Leone.

*eleala*. **D. eleala** Hew. (66 a). Frons white, above laterally black. Hindwings at veins 2 and 3 with small tails. Wings beneath white, with a postmedian, almost straight, orange transverse band finely bordered with black, which on the hindwing is 4 mm distant from the margin at vein 5; forewing with one, hindwing between the costal margin and vein 3 with two dark submarginal lines; forewing at the margin broadly darkened; an oblong, black marginal spot broadly encircled by orange in 2 of the hindwing; anal lobe black, proximally red; the black colour bordered with blue. — ♂. Forewing beneath at the posterior margin with a yellow hair-pencil. Wings above of a beautiful blue; apex and margin of forewing broadly black, at the anal angle tapering off; anal lobe of hindwing without any red. ♀. Wings above blackish-brown; forewing in the basal half, hindwing almost to the margin thinly dusted with a bluish grey; anal lobe of hindwing in front and proximally scaled red; a fine white line close in front of the margin. Sierra Leone to the northern Congo District.

*ituri*. **D. ituri** Baker (66 a) is unknown to me, but according to the description and figure it seems to resemble *eleala* very much and only to differ by the upper surface of the ♂ being small and the transverse band beneath somewhat broader. The hair-pencil at the posterior margin of the forewing beneath light yellow. Congo District near Makala.

*obscura*. **D. obscura** Baker. ♂. Both wings above dull black, between the veins a little dusted blue. Both wings beneath white, with a postmedian, rather narrow, orange transverse band; forewing beneath with a narrow, submarginal grey stripe and at the margin broadly grey; transverse band of hindwing at the proximal margin distinctly dentate like a W; a fine submarginal line as far as the marginal spot of area 2; margin fine black and proximally accompanied by a grey stripe growing broad in front; marginal spot of area 2 jet-black, curled yellow; anal lobe black with some blue scales, in front and distally bordered with orange. ♀. Both wings above dull brown; forewing uni-coloured; hindwing with a black marginal line, a fine white antemarginal line and white submarginal spots; anal lobe black dusted with blue, proximally with a fine orange line; under surface as in the ♂, the orange markings, however, yellow. Nigeria.

*fusca*. **D. fusca** is a new species which will be described in the „Results of the second German Central African expedition in 1910—1911.“ It originates from Belgian Congo.

*elealodes*. **D. elealodes** Baker (66 a) resembles the two last species, but it deviates by the transverse band beneath being very narrow and extending almost in the middle, and by both wings being white as far as the margin with a fine submarginal line. The submarginal spot in area 2 on the hindwing beneath is small and surrounded by a very light yellow; anal spot black with blue scales. The pencil at the posterior margin of the hindwing beneath is black. Wings of the ♂ above blue and black as in *eleala*-♂. The ♀ is unknown. Congo District near Makala.

*bimaculata*. **D. bimaculata** Hew. (66 a) is known only in the female, but it probably belongs as a female to one of the species of the third group mentioned above. Frons white, above in the middle yellowish-brown.



Wings above dark brown; forewing near the middle with a light yellowish, round spot covering the middle of the area 1 b and the base of area 2; hindwing between the veins 1 c and 5 with a broad, ochreous-yellow, submarginal transverse band and close in front of the margin with a fine, white line from the anal lobe to vein 5 or 6. Forewing beneath white, close behind the middle with an almost straight, blackish, somewhat slanting transverse band of 1 mm width extending from the costal margin almost to vein 1, and at the margin with two grey marginal bands incompletely separated by a white longitudinal line; hindwing beneath with an indistinct transverse band only represented by two dark lines, with two dark submarginal lines in 3 to 6, with a black marginal spot surrounded by red in 2, a smaller similar spot scaled blue in 1 c, and a black anal lobe dusted with blue. The latter is above black, scaled red and blue. Sierra Leone.

#### Fourth Group of Species.

In this group I combine all those species in which the ground-colour beneath both wings is neither yellow nor green or purely white. Besides the forewing never exhibits in or somewhat behind the middle a dark transverse band of 1 to 2 mm width, but one or two light transverse lines at most.

It is rather difficult to give a satisfactory review of the numerous species comprising both sexes, particularly the colouring of the forehead, being so very important for the division, is unfortunately often not mentioned in the descriptions. In order to facilitate the determination of the species, I distribute them among three subdivisions.

#### Review of the Subdivisions.

- A. Hindwing beneath in the basal part as far as the apex of the discal cell one-coloured without markings or at most with a fine, white transverse line in the discal cell behind its middle or with a transverse band, but without round dots.
  - α. Both wings beneath blackish-brown or blackish with fine, white transverse lines. Forehead black with white lateral margins. First Subdivision.
  - β. Wings beneath greyish-brown or whitish-grey, with a distinct transverse spot bordered with white at the end of the discal cell. Forehead white, often above in the middle covered with orange-yellow \*). Second Subdivision.
- B. Hindwing beneath in the basal part with 1 to 4 red or black, white-curved, distinctly prominent dots (in the areas 1 a, 1 c, 7, and in the discal cell). Third Subdivision.

#### First Subdivision.

The species are easy to discern from those of the two other subdivisions, but they are not entirely homogeneous among each other, since the three first species evidently deviate rather considerably from the others.

#### Review of the Species.

- A. Margin of the forewing almost straight or only slightly convex; its apex obtuse or rectangular. — ♂ forewing beneath in area 1 b close at the discal cell with a jet-black, lustrous spot, above never as far as the margin monotonously lustrous blue.
  - α. Hindwing beneath on either side of the final vein of the discal cell with a fine, white transverse streak which is separated afar from the final vein. — ♂. The hair-pencil at the posterior margin of the forewing beneath is black.
    - \*. Hindwing above black with blue marginal spots and blue longitudinal stripes (♂) or quite smoky brown (♀). — ♂. Hindwing above in the basal part of the area 1 c with a large, black hair-pencil fastened at the median and showing towards the proximal margin. — *Pilodeudorix* Ham. Druce. *D. cameroni*.
    - \*\*.
  - β. Hindwing beneath as far as beyond the discal cell one-coloured without light markings. — ♂. The hair-pencil at the posterior margin of the forewing beneath yellow. Wings above black with blue longitudinal streaks. *D. diyllus*.

\*) The colour of the forehead of *catori* and *zelomima* has remained unknown to me.

B. Margin of the forewing more or less convex, sometimes almost prominently bulging; its apex sharp-pointed. — ♂. Forewing without a black spot on the under surface at the base of area 1 b. The mealy spot of the hindwing above covers the base of the areas 6 and 7, sometimes also a part of the discal cell. Wings above as far as, or almost as far as the margin, intensely dark blue or greenish blue. — *Diopetes Karsch.*

α. Forewing beneath at the posterior margin at least as far as the fold of the area 1 b whitish; the light colour is distinctly defined.

\*. Wings beneath only with whitish nebulous bands or spots, but in the marginal area without the 3 or 4 fine, white transverse lines peculiar of the other species of this group.

*D. pasteon.*

\*\* Both wings beneath in the marginal part with 3 or 4 fine, white transverse lines.

1. Small species. ♂. Veins on the hindwings above black. *D. kedassa.*

2. Larger species. ♂. Veins above not black. *D. catalla.*

β. Forewing beneath at the posterior margin not or only little lighter or only in the area 1 a whitish. Both wings beneath in the basal part as far as the first transverse line one-coloured without markings.

\*. The innermost of the three white transverse lines of the forewing beneath is situate in the area 1 b about 6 mm distant from the margin and is 3 or 4 times as distant from the second as the latter is distant from the third. — ♂. Wings above dark violettish-blue, with a slight reflection.

*D. violetta.*

\*\* The innermost white transverse line of the forewing beneath is situate in the area 1 b only 3 to 4 mm distant from the margin and at most twice as distant from the second as the latter is distant from the third.

1. ♂. Wings above purely blue with a slight reflection. — ♀. Wings above monotonously brown, somewhat lustrous, but without blue or violet scales. *D. deritas.*

2. ♂. Wings above greenish blue, with a strong reflection and for this reason, on being seen perpendicularly from above, only in the basal half of the forewing blue, but distally blackish. — ♀. Wings above for the greatest part dull blue, towards the margin blackish.

*D. corruscans.*

*camerona.*

**D. camerona** Plötz (65 k). Wings beneath blackish with a fine, white transverse streak in the cell near its apex, a similar transverse streak close behind the cell in 4 and 5, 2 white discal lines and two similar submarginal lines; the discal and submarginal lines are often interrupted at the veins and usually form a bow in each area, so that the bows of the first and third lines are proximally convex, those of the second and fourth lines distally convex, the hindwing showing besides a fine white line close at the margin between the veins 1 c and 5; a black submarginal spot encircled with red in 2; anal lobe above black and red with some blue scales, beneath black, towards the base bordered with red. Wings above in the ♂ black with blue longitudinal rays in 1 b, 4 to 6 and the discal cell of the forewing, and in 1 c, 5 and the discal cell of the hindwing; the latter, besides with blue marginal spots in 2 to 4; areas 1 a and 1 b of the hindwing whitish. In the ♀ the wings are above monotonously smoky brown, with a violet hue or scaled blue at the base. Sierra Leone to Cameroon.

*diyllus.*

**D. diyllus** Hew. (66 a, b) is very much like *camerona*, from which it deviates beside the marks mentioned in the review only by the ♂ showing the areas 2 to 4 on the hindwing above almost entirely scaled blue with black veins, and by the ♀ exhibiting the wings above monotonously dark smoky grey without a violet hue. The species is somewhat smaller than *camerona*. ♂. Pencil at the posterior margin of the forewing beneath yellow. Sierra Leone.

*kohli.*

**D. kohli** sp. n. ♂. Forewing above blackish with a dark brown marginal band of 4 to 5 mm width, the black colour being almost rectilinearly defined towards the margin and reaching about the middle of the areas 3 and 4; the areas 1 a and 1 b as far as the brown marginal band densely covered with scales of a blue reflection; the scales of the discal cell and those in the basal part of the areas 2 to 6 are projecting and form a large, mealy spot; the posterior margin is before the middle bulgingly expanded. Hindwing above in the areas 1 c to 6 and in the discal cell of a bright blue with an indistinctly defined black spot somewhat before the margin in the areas 2 and 3; the areas 1 a and 1 b are dark grey, 7 and 8 blackish; a fine, black marginal line; anal lobe red, bordered with black; small tail black, at the end white; margin at vein 3 obtusely rounded off. Under surface dark slate-coloured merging somewhat into greenish; the markings are scarcely darker than the ground-colour and therefore only distinctly prominent by the white border-lines; a transverse spot at the cell-end, on each side bordered by a fine, white line; the discal transverse band is irregular, formed by square spots and only in the areas 1 b and 1 c of the hindwing decorated with some yellow scales; two white submarginal lines; fringes coloured dark; anal lobe of the hindwing beneath black, towards the base bordered by a red spot; in the area 2 a large, black marginal spot curled orange-yellow; a fine white marginal line is anteriorly indistinct. Expanse of wings: 25 mm. Congo District.



**D. pasteon** *Ham. Druce* (66 b). ♂. Wings above dark blue; forewing at the costal margin and apex *pasteon*. blackish; hindwing at the costal and proximal margins blackish and with black veins. Wings beneath of a brown ground-colour; forewing at the posterior margin white and with a whitish band at the margin; the transverse vein is bordered with whitish; hindwing across the apex of the discal cell with a whitish nebulous band extending from vein 8 to the proximal margin, and scaled whitish at the margin; a black submarginal dot in area 6 and a larger one encircled with red in 2. Cameroon: Bitje.

**D. kedassa** *Ham. Druce* (66 b) deviates from the following species only by the marks mentioned *kedassa*. in the review. Expanse of wings: about 27 mm. The ♀ on the wings above is entirely without the blue colour of the ♂. Cameroon: Bitje.

**D. catalla** *Karsch* (65-k). ♂. Wings above beautifully dark blue with veins of the same colour, fore- *catalla*. wing at the costal margin and apex narrowly black, hindwing as far as the margin blue with black fringes, only in 1 a, 1 b, 7 and 8 black, the apex of area 7, however, blue; the mealy spot is large, light yellowish, broadly encircled by black. Wings beneath dark blackish-brown; in the marginal half of the forewing with 3 fine, white transverse lines, the innermost of which is almost straight, the distal ones being angularly broken; in the marginal half of the hindwing with 4 fine, white lines, of which the most distal is close to the margin; the basal parts of both wings either in the cell or at the cell-end scaled and striated white; or as far as the first transverse line quite unicolorous without markings. Togo to Cameroon.

**D. violetta** *Auriv.* (68 a). ♂. Both wings above as far as the margin very dark violettish-blue without *violetta*. markings; the under surface only deviates from the allied species by the marks stated in the review. ♀ unknown to me. Gabun to Congo.

**D. deritas** *Hew.* (66 b) only differs by the marks mentioned in the review. The principal form has *deritas*. an expanse of about 29 mm. Cameroon to Angola. — **aucta** *Karsch* has an expanse of 38 mm, but otherwise it *aucta*. exactly corresponds with *deritas* and is presumably only a form of it. Togo to Cameroon.

**D. corruscans** *Auriv.* (66 b) chiefly deviates from *deritas* by the strongly reflecting upper surface *corruscans*. of the ♂ forewing being blackish towards the margin and by the ♀ upper surface being very dark, bluish-violet. Anal lobe of the hindwing in the ♂ above black, beneath towards the base bordered by red, in the ♀ above red, encircled by black, beneath as in the ♂. Cameroon to Ogowe.

## Second Subdivision.

Both wings beneath with a distinct transverse streak or transverse spot at the end of the discal cell, hindwing at vein 3 angled, but not tailed.

## Review of the Species.

A. Forewing beneath between the discal cell and the submarginal line only with a single, almost straight, undulate or level transverse line.

α. Under surface light grey or whitish-grey with a fine, yellow, feebly undulate, discal transverse line. — ♂ (as far as it is known): forewing beneath at the base of area 1 b with a black mealy spot, above mostly blue.

\*. The discal transverse line beneath is distally not bordered with white. — ♂. Hindwing above in 1 c with a black hair-pencil. *D. kafuensis*.

\*\*. The discal transverse line beneath is distally bordered with white. — ♂. Hindwing without a pencil in the area 1 c. *D. catori*.  
*D. bamba*.

β. Under surface dark grey, with a faint greenish hue. The discal transverse line of the forewing beneath is blackish, distally bordered with white; that of the hindwing irregular, composed of blackish-grey transverse streaks or spots distally and often also proximally bordered with white. *D. zela*.

B. Forewing beneath between the discal cell and the submarginal lines with two whitish transverse lines, the proximal one being towards the margin, the distal one towards the base bordered with brown or blackish; these two transverse lines consequently enclose a more or less distinct transverse band.

α. The discal band of the forewing beneath is distinctly interrupted at vein 4. — ♂. Wings above for the greatest part light blue; forewing above with a large, black velvety spot at the apex of the discal cell, beneath with a large mealy spot at the base of area 1 b. *D. caerulea*.



β. The discal band of the forewing beneath coherent and almost straight. — ♂. Forewing above without a velvety spot and beneath without a black mealy spot in 1 b.

\*. ♂. Wings above blackish, in an oblique light with an intense blue reflection in the marginal half, in the basal part not or only faintly bluish. ♀ unknown.

1. ♂. Wings without reddish-yellow markings.

*D. odana.*

2. ♂. Hindwing above with a reddish-yellow marginal band or at least with a reddish-yellow spot in the area 2.

*D. galathea.*

\*\* ♂. Wings above blackish-brown without a blue reflection; the forewing with a reddish-yellow spot of the posterior margin, reaching at least vein 2; hindwing from the apex of the discal cell to the margin broadly orange-yellow. ♀. Wings above changing from blackish to greyish-brown, at the base and in the middle more or less covered with a greyish blue.

*D. diocles.*

*kafuensis.*

**D. kafuensis** Neave (66 b). ♂. Wings above dark blue with black veins, forewing at the costal margin as far as the discal cell, at the apex and margin as far as the anal angle rather broadly blackish, the blue basal part of the areas 4 and 5 about 3 mm long; hindwing at the costal margin as far as vein 6 and at the proximal margin in 1 a and 1 b blackish, anal lobe scaled orange-red. Wings beneath whitish-grey with a yellow transverse streak at the end of the discal cell and a fine, yellow discal line; forewing with a yellowish submarginal line and a black mealy spot at the base of area 1 b; hindwing with two submarginal lines, a black submarginal spot encircled by orange-red in 2, a black anal lobe scaled blue, and a red streak at the proximal margin from the anal lobe to vein 1 a. ♀ similarly coloured as the ♂, but somewhat lighter and larger. North Rhodesia.

*catori.*

**D. catori** Baker is known to me only by the description running as follows: ♂. Both wings above black, everywhere suffused with smalt; forewing at the costal margin as far as the subcostal vein, at the apex and margin black; the black colour gradually narrows to a line towards the anal angle; on the hindwing the anal lobe, the small tail and the mealy spot at the costal margin are black. Both wings beneath light grey with the usual square transverse spot at the end of the cell, a yellow discal line distally bordered with white, and a similar submarginal line ending on the hindwing at the spot of area 2; the discal line of the hindwing towards the proximal margin dentated in the shape of a W; the submarginal spot of the area 2 black, proximally and laterally encircled by red; anal lobe black, proximally scaled blue, and at the proximal margin accompanied by a red stripe bordered with black. Hair-pencil at the posterior margin of the forewing beneath black. Sierra Leone.

*bemba.*

**D. bemba** Neave (66 b, c). The ♂ is not known; the description of the under surface of *D. catori* Baker mentioned above, however, so exactly corresponds with that of *bemba* that it is probable that *bemba* is the ♀ of *catori*. Wings above blue; forewing at the costal margin, at the apex almost as far as the cell and at the margin broadly black; hindwing all around about 2 mm broad black; anal lobe red, at the apex black with blue scales. North Rhodesia.

*zela.*

**D. zela** Hew. (66 e). ♂. Wings above blackish with a bluish tint; forewing without markings; hindwing with bright blue lines along the veins 1 b and 2 and with similar marginal streaks in 1 e to 6. The under surface has been described above in the review of the species; anal lobe and submarginal spot of area 2 black proximally bordered by red. The ♀ above monotonously dark smoky brown. Sierra Leone. — **zeloides** Btlr. seems to be the southern form and is said to deviate only by the lighter colouring and broader, more irregular markings beneath. Forewing above dull greenish steel-blue; hindwing above light blue. Rhodesia and Nyassa District.

*zeloides.*

*zelomima.*

**D. zelomima** Rbl. This species, unknown to me, is described according to a single ♂: „above like *D. zela* Hew., from which it differs by its purer ashy-grey under surface being intensely lustrous blue and much more distinctly and differently marked. The forewing exhibits two complete, antemarginal, brown transverse bands feebly bordered with white, being convergent towards the proximal margin and distinct as far as the anal vein. The double discal streak is here also filled up with brown and towards the base bordered with white. The hindwing has a similar scheme of markings as *zela*, but in a basal direction from the double discal streak filled up with brown, there is another brown transverse band bordered with white extending from the subcosta to the cubital end. The distal, interrupted transverse band is filled up with a lighter brown, and the black dot in cell 2 is towards the base bordered with hemochrome (and not orange-red as in *zela*). Length of forewings: 15 mm.“ North western shore of Lake Tanganyika.

*caerulea.*

**D. caerulea** Ham. Druce (66 e). ♂. Wings above lustrous light blue; forewing with the costal margin almost to the discal cell and the apex very broadly (about 4 mm) blackish-brown, in the middle with a large, black velvety spot dusted with blue, covering the cell-apex and the bases of the areas 2 to 6, 9 and 10; hindwing in 1 a and 1 b and at the costal margin as far as vein 6 blackish-grey, in 1 c to 5 and the cell blue with a fine, black marginal line; anal lobe at the apex black with blue scales, proximally scaled red. The under surface is described in the review. The hair-pencil at the posterior margin of the forewing beneath is black. In the ♀ the forewing above is dull violettish-blue with a broad dark brown costal margin, apex and distal margin, the hindwing also blue with a broad blue costal margin and apex, the distal margin being narrowly



blue; anal lobe black, proximally bordered with yellow. Nigeria and Adamaua. — *obscurata* Trim. is the southern *obscurata*. race and deviates in the male by the velvety spot of the forewing above being still larger, covering a considerable part of the areas 2 to 5 and running distally almost parallel with the margin; the hair-pencil of the forewing beneath is yellowish-brown with a black apex. Ovambo District, Manica Land, Portuguese East Africa.

**D. odana** Ham. Druce (68 a). ♂. Wings above monotonously dark greyish-black with a faint blue *odana*. tint particularly in the basal part of the forewing; the square mealy spot of the hindwing (at the base of vein 7) in a certain light with an intense copper-coloured reflection; the anal lobe of the hindwing is black with blue and red scales. Under surface grey, at the margin brownish, both wings with a spot at the end of the discal cell; forewing with a broad, coherent discal band bordered with white, being slightly darker than the ground-colour, and a narrow, indistinct submarginal band; hindwing with a very irregular discal band and a black submarginal spot all round encircled by red; anal lobe black, somewhat dusted with bluish. In the ♀ the wings are above yellowish dark grey, in a certain light with a faint, bluish-violet reflection and a black marginal line. Nigeria to Cameroon.

**D. galathea** Swns. only deviates from *odana* by the reddish-yellow colouring at the margin of the *galathea*. hindwing above. The mealy spot of the hindwing shows a white or golden reflection. Sierra Leone.

**D. diocles** Hew. (66 c). ♂. Forewing above black with a large, orange-red spot of the posterior margin, *diocles*. reaching at least vein 4 and being 5 to 7 mm broad at the posterior margin. Hindwing above orange-red, at the base blackish-grey almost to the cell-apex; fringes black; anal lobe blue, scaled, black and reddish. Wings beneath slate-coloured, the submarginal spot in the area 2 of the hindwing only proximally bordered with red, otherwise entirely marked as in the two species mentioned last. — The ♀ is somewhat larger and has a whitish bluish-grey discal spot not reaching the posterior margin, covering the middle of area 1 b and the bases of the areas 2 to 4; hindwing dark brown, suffused with a bluish grey, with a black submarginal spot in 2 and a black marginal line proximally bordered with white, in the areas 1 c to 4; under surface as in the ♂. Natal to British East Africa. — *vosseleri* Strand. The ♂ deviates by the orange spot of the forewing being smaller and *vosseleri*. extending only to vein 2, and by the ♀ resembling above the ♀ of *antalus* (66 e), though it is without the black submarginal dot in the area 1 c of the hindwing. German East Africa. — The larva of *diocles* lives in the pod of a species of Acacia and eats up the seeds; it is longish and flat, reddish-brown with yellow markings and black dots on the joints 1, 2, 11 and 12, the joints 3 to 10 laterally greenish. Pupa obtuse, stout and rounded off, brown with yellow spots on the dorsum.

### Third Subdivision.

The species belonging hereto are at once discernible from all the other African *Deudorix*-species by the basal dots on the hindwing beneath. The sexes are usually above differently coloured and the ♂♂ invariably show a mealy spot at the base of vein 7 on the hindwing above and a black hair-pencil at the posterior margin of the forewing beneath. The ♀♀ often greatly resemble each other and are as yet incompletely known; of several species they are not before me. I could therefore not take any account of them in the following review.

### Review of the Males.

A. Hindwing above for the greatest part orange-red, or yellowish-red.

α. Forewing above one-coloured blackish-brown with a faint, blue reflection. Basal dots on the hindwing beneath red. *D. dariaves*.

β. Forewing above with a smaller or larger red area.

\*. Forewing above blackish in area 1 b, or in 1 b and 2 with a round, reddish spot not reaching the posterior margin.

1. Hindwing above with a black marginal band of at least 1 mm width. Forehead black, with broad, white, lateral margins. Basal dots on the hindwings beneath large and jet-black. *D. lorisona*.

2. Hindwing above as far as the margin reddish-yellow only with black fringes. Basal dots on the hindwing beneath small. *D. diopolis*.

\*\*. Forewing above with a large, orange-red spot of the posterior margin, or for the greatest part orange-red. Hindwing beneath with 3 basal dots at most (in 1 a, 7 and in the cell). Forehead white or in the middle more or less orange-yellow.

§. Forewing above at the costal margin at least as far as the discal cell black or dark grey.

o. Basal dots and transverse lines on the hindwings beneath red.



1. The orange-red spot of the posterior margin on the forewing of a moderate size, and the black marginal band anteriorly very much expanded, at vein 4 at least twice as broad as at vein 1. *D. licinia*.
2. The orange-red spot of the posterior margin on the forewing very large; the costal margin, apex and distal margin therefore only narrowly black; the marginal band between the veins 1 and 4 almost equally broad and only about 2 mm broad. *D. dinochares*.
- oo. Hindwing beneath with 2 or 3 black basal dots, one in the discal cell, one in area 7 and sometimes also one in 1a. *D. livia*.  
*D. dohertyi*.

§§. Forewing above as far as the costal margin orange-red, only the apex and the distal margin, posteriorly very much narrowed, black.

B. Wings above one-coloured without red spots or areas.

- α. Wings above rather light monotonously brown, not darker at the margins with a faint coppery lustre and at the base of the forewing with a violet or blue reflection. *D. antalus*.
- β. Wings above black, at the proximal margin of the hindwing light grey. *D. caliginosa*.
- γ. Wings above blackish-blue and strewn with bright blue scales. *D. tsiphana*.

The under surface is in all the species rather similarly marked. It suffices therefore to describe it here and only to state the differences in the single species. Both wings at the end of the cell on each side of the transverse vein with a straight, black or reddish-brown transverse streak, then about in the middle between the cell and the margin with a discal transverse band which, however, is not or only slightly darker than the ground-colour and for this reason only prominent by its bordering, as it is bordered on both sides by dark, white-bordered transverse streaks; the transverse band of the forewing is broad and almost straight, sometimes a little interrupted at vein 4, the spot in 3 being nearer at the base than that in 4. On the hindwing it is very irregular and almost entirely broken up into angular or curved spots; the spot (or the transverse streaks) in 7 much more towards the base than that in 6, the latter somewhat nearer at the base than those of the areas 4 and 5, which are equidistant from the margin and form a straight transverse band; the spots in 2 and 3 are also coherent, but they are somewhat nearer at the base and slanting compared with the others; the spot in 1c is strongly curved and the last spot in 1b is long and narrow and very slantingly directed towards the middle of the proximal margin. Forewing with one, hindwing with two dark submarginal lines of which the proximal one is more distinctly prominent, being continued at the proximal margin as far as vein 1 and bordering on the submarginal spots of the areas 1b to 2 towards the base, whilst the distal one ends at vein 3 or is indistinct towards the anal margin. Anal lobe beneath black with blue scales; a small, often transverse, black submarginal spot scaled blue in 1c and a larger one proximally bordered with reddish-yellow in 2. A fine, dark marginal line proximally bordered with white.

*dariaves*. **D. dariaves** Hew. (66 e). ♂. Forewing above one-coloured black with a faint, bluish reflection; hindwing reddish-yellow, at the base as far as the cell-apex, and at the proximal margin blackish-brown; a fine, black marginal line. Basal dots on the hindwings beneath large and red; the discal bands bordered with black, only in the area 7 of the hindwing inside bordered by a red transverse spot. In the ♀ both wings above are dark blackish-grey, in the middle somewhat lighter and between the veins 2 to 6 of the hindwing with a distinctly defined, whitish-grey submarginal band of about 2 mm width. Delagoa Bay to British East Africa.

*lorisona*. **D. lorisona** Hew. (66 d). Forehead black with white lateral margins. ♂: forewing above black with a round, red spot in area 1b; hindwing at the base and at the proximal margin almost to vein 2 black and with a black marginal band of 1 mm width, otherwise reddish-yellow; the mealy spot at the costal margin slate-coloured. On the under surface the discal bands are filled up with dark, and the hindwing at the costal margin broadly brightened up by whitish; basal dots large and black. The ♀ is unknown to me. Sierra Leone to the Niger. (British East Africa?).

*diopolis*. **D. diopolis** Hew. (♂ = *rutila* Mab.; ♀ = *wardi* Mab.) (66 d) only differs from *lorisona* by the marks mentioned in the review. The hindwing beneath is at the costal margin not lighter. In the ♀ which probably belongs to this species the forewing is above black with a large, distinctly defined, almost white spot covering the areas 1e and 2 from the base to about 4 mm from the margin; hindwing at the base, costal margin and proximal margin broadly black in the areas 2 to 5 light bluish-grey with black submarginal dots in 1c and 2. Madagascar.

*licinia*. **D. licinia** Mab. (= *derona* Smith) (66 d) \*). The ♂ only deviates from the allied species by the marks mentioned in the review. In the ♀ the forewing above is blackish with a greyish-blue spot of the posterior margin, reaching vein 4 and distally bordered by a dark marginal band of at least 3 mm width, strongly expanded at the posterior margin; hindwing dull greyish-blue, at the base somewhat darker with the usual markings at the anal angle. Madagascar. — **batikeli** Bsd., described according to a ♀, owing to the figure only differs by a somewhat larger, greyish-blue spot of the posterior margin of the forewing and is probably nothing else but a ♀ of *licinia*, in which case the species must be called *batikeli*. MABILLE, in GRANDIDIER's large work, states that the ♂ of *batikeli* is almost quite similar to the ♀; this statement, however, is certainly attributable to the fact that he took small ♀♀ to be ♂♂. Madagascar.

*dinochares*. **D. dinochares** Smith (= *licinia* Trim. non Mab.; *dieden* Karsch) (66 d). ♂. Forewing above orange-red, only at the costal margin as far as the cell, at the apex and margin black; apex about 4, distal margin about 2 mm broad black; hindwing as far as the margin orange-red, at the proximal margin as far as vein 1b and at the base only to the middle of the cell blackish; ground-colour beneath slate-coloured. The ♀ differs

\*) Our figure 66 d exactly reproduces a specimen from the satellite island Nossi-Bé. But since it does not well correspond with the original description, we mention it here as doubtful.



from that of *licinia* only by the bluish-grey colouring above being fainter and more diffuse. Transvaal, Matabele Land, Mashuna Land, Delagoa Bay, German and British East Africa, Madagascar.

**L. livia** *Klug* (66 e) is very closely allied to the preceding and only deviates by the black markings *livia*. beneath; the black marginal band on the ♂ forewing above grows posteriorly much narrower and is more pointed. Wings in the ♀ above lighter brown; with a bluish-grey tint as far as beyond the middle. — The larva in its young state is green, later on flesh-coloured, and lives in the pods of *Acacia nilotica* and *farnesiana*, and is said also to harm the fruits of the pomegranate-tree. British East Africa, Somali Land, Nubia, Arabia and Nigeria.

**D. dohertyi** *Bak.* is unknown to me. The forewing, according to the description, is in the ♂ above *dohertyi*. lead-coloured with a large, orange-yellow, almost square spot of the posterior margin, extending from the middle of the posterior margin to the cell-apex and vein 5 and being distally slantingly cut off; hindwing orange-yellow with a lead-coloured base, proximal and costal margins; distal margin finely black; under surface with a light grey ground-colour. British East Africa; Kikuyu.

**D. dinomenes** *Smith.* ♂. Wings above orange-red, lustrous, only the apex and distal margin (very *dinomenes*. narrow) of the forewing black. Basal dots and transverse lines beneath red; forewing beneath at the posterior margin orange-yellow. ♀ similar to that of *dinocharis* (66 h), but above more grey and with a distinct, black submarginal spot in the area 1 c. Sierra Leone; Transvaal and Delagoa Bay.

**D. antalus** *Hpfrr.* (66 e). ♂: wings above monotonously coppery brown without any other markings *antalus*. but two small, black submarginal dots of the hindwing in 1 c and 2; anal lobe scaled blackish-blue, at the proximal margin yellowish; under surface grey with black basal dots and dark transverse lines. The ♀ is very much like the ♀♀ of the allied species, above brown, dusted bluish-grey beyond the middle and in the middle of each wing brightened up by whitish, the submarginal spots and anal lobe of the hindwing as in the ♂. — The larva lives in the pods of *Crotalaria capensis*, being above greyish or flesh-coloured with black dots and spots and covered with short, black bristles; the first and second joints are yellow. Pupa of the usual shape with a blackish thorax and wing-sheaths, the posterior body reddish-yellow, densely covered with small black dots and a black dorsal line. On the whole continent common, also in the Comoro Islands and in Madagascar. — ab. ♀ **kitobolensis** *kitobolensis*. *Strand* is larger and has the ground-colour of both wings beneath more brownish-grey and the transverse bands of the forewing beneath a little narrower; the under surface of the hindwing is distinguished by the presence of only 2 distinct, black, basal punctiform spots, that in the dorsal area being only very feebly indicated. Belgian Congo.

**D. caliginosa** *Lathy* (66 c). ♂. Wings above blackish with a purple lustre, beneath dark slate-coloured *caliginosa*. with the usual markings, but without black submarginal dots above on the hindwings. ♀ unknown. Nigeria.

**D. tsiphana** *Bsd.* ♂. Wings above blackish-blue, strewn with light blue scales. Hindwing above *tsiphana*. at the margin in the areas 1 b to 2 greyish-yellow with distinctly prominent black dots in 1 c and 2. The under surface is almost white and rather considerably deviates from the other species in the marking. Forewing with a thick, submarginal nebulous line from vein 1 to vein 6, and with a slanting nebulous band extending from the submarginal spot of area 1 b to the middle of the costal margin; the areas 4 and 5 in the middle a little darkened; hindwing in the middle somewhat darkened with a black basal dot in 7, a transverse streak at the cell-end, a broad transverse spot in 7, opposite the apex of the cell and the border-lines of the indistinct discal band coloured greyish-brown; the submarginal spot of the area 2 proximally bordered with a reddish yellow; anal lobe long and narrow; the small tail short. In the ♀ the wings above are blackish-grey, at the base suffused with bluish. Madagascar.

**D. rava** *Holl.* ♀ upper surface dark brown with an oval orange spot in the forewing behind the cell *rava*. and the distal third of the hindwing from the costal angle to the anal angle also orange-yellow; the margin of the hindwing is dark brown and the orange-yellow colour before the little tail interrupted by a brown round spot; the little tail black with a white tip. The under surface marked almost as in *eleala* *Hew.* (66 a). This description is too scant for the diagnose of the species. *rava* may be the ♀ of *aruma* or it may be allied to *orisona*. Ogowe River.

**D. renidens** *Mab.* is another species entirely unknown to me, described as *Hypolycaena*, but probably *renidens*. belonging to *Deudorix*. ♂. Wings above black; forewing with a postmedian, blue, bright area with a green reflection; hindwing in the middle with a triangular, blue spot and a bluish anal lobe; fringes black. Wings beneath dull blackish, forewing in the discal cell with a darker spot proximally bordered with white, and with a dark marginal band pointed towards the anal angle; hindwing beneath at the base with 3 black dots surrounded with white, in the cell with 2 transverse streaks, 2 rows of white transverse streaks in the middle and 2 at the margin; a black marginal spot bordered with red in the area 2; anal lobe with blue scales. Madagascar.





\*\* Veins 6 and 7 of the forewing rise separately from the same place. Wings above not red. Forewing above in the area 1 b at the margin with a black eye-spot curled whitish. 18. *Leptomyrina*.

β. Forewing with 11 or 12 veins.

\*. Eyes with dense, long hair. Forewing with 11 veins.

19. *Capys*.

\*\* Eyes bare.

§. Middle and posterior tibiae with little spurs. Anterior tarsi of the ♂ unjointed. Antennae longer than the thorax.

o. The first subcostal vein (vein 11) of the forewing is united with the costal vein soon after its rise. 14. *Chloroselas*.

oo. The first subcostal vein (vein 11) of the forewing runs quite separately.

\*. Vein 6 of the forewing rises separately from the apex of the discal cell.

a. Palpi not or moderately compressed. Hindwing at vein 1 b nearly always angled.

a'. Hindwing at the anal angle angled or tailed, rarely rounded off; forewing, however, in this case with 12 veins. Fringes of hindwings nearly always angled or undulate. (Anal lobe absent.) 20. *Phasis*.

b'. Hindwing with a small anal lobe and with a short, extremely fine tail at the end of vein 1 b. Fringes of hindwings completely margined. Forewing only with 11 veins; vein 7 terminates into the apex of the wing.

21. *Crudaria*.

b. Palpi very much compressed. Hindwing at vein 1 b rounded off, completely margined. Forewing with 11 veins; vein 7 into the apex.

23. *Spalgis*.

\*\* Vein 6 of the forewing for some distance petioled with vein 7.

1. Antennal club only gradually thickened. Palpi ending into a long point. Hindwing at vein 1 b only with a short lobe. 22. *Eriksonia*.

2. Antennal club distinctly defined, cylindrical, obtuse. The last joint of the palpi very short and rather obtuse. Hindwing at vein 1 b with a small fine tail.

16. *Desmolycaena*.

§§. Middle and posterior tibiae without spurs. Anterior tarsi of the ♂ jointed as in the ♀ and armed with two claws. Forewing with 11 veins. Antennae not longer than the thorax.

24. *Arrugia*.

#### 4. Genus: **Myrina** F.

The *Myrina*-species are immediately recognizable by the formation of the hindwing and by the veins 5 and 6 of the forewing rising from the same place. The eyes are bare; the antennae short and stout, by far not reaching the apex of the discal cell, gradually thickened with a distinctly defined club. Forewing with 11 veins; vein 7 into the apex. Hindwing at the anal angle posteriorly extended with a long, broad tail-appendage at vein 1 b and with a feeble, narrow anal lobe on the inside of the small tail; at vein 2 without an appendage, or feebly angled at most.

The larvae live on ficus-species and are often infested by ants; the joints 2 to 9 above in the middle bossy.

#### Review of the Species.

A. Wings beneath dark buff merging into a yellowish brown, a little behind the middle with a joint yellow transverse line, on the forewing sometimes only distinct at the costal margin, on the hindwing as far as vein 2 almost straight, but then rectangularly broken towards the proximal margin. Both wings above in the basal half or beyond the middle of a bright blue. Forehead on each side covered with ferruginous bristly hair.

α. Forewing above in the black marginal part with a broad, ferruginous transverse band not reaching, however, the margin, or blackish without markings. *M. silenus*.

β. Forewing above at the margin itself very broadly ferruginous. *M. ficedula*.

B. Wings beneath monotonously brownish-grey or blackish-grey; forewing unmarked; hindwing far behind the middle with an irregularly broken or serpentine black transverse line and with submarginal spots in 1 b to 2. Forehead black with white lateral spots or lateral margins.

α. Hindwing beneath without hemochrome spots, or only with traces of such a spot in 1 c.

\*. The transverse line of the hindwing beneath is broken up into 8 black, rounded spots of the areas 1 b to 7 and almost rectangularly broken at vein 5. *M. sharpei*.

\*\* The transverse line of the hindwing beneath almost coherent and formed of straight, black transverse streaks bordered with white at least in 1 b and 1 c towards the base. *M. subornata*.

β. Hindwing beneath at the anal angle with three large, red, contiguous submarginal spots in the areas 1 b, 1 c and 2; the transverse line is black, bordered with white and continuous, but it only reaches vein 3 or 4. *M. dermaptera*.

*silenus*. **M. silenus** *F.* (68 a). Wings above black, at the base as far as the apex of the cell and in the basal part of the areas 1 a to 2 on the forewing and 2 to 6 on the hindwing of a bright blue; the blue colour in the ♀ less extensive than in the ♂; before the margin between the veins 1 and 7 or 2 and 7 (♀) with a yellowish-brown submarginal band being 5 mm broad in the middle. The black marginal band of the hindwing is broad and anteriorly very much expanded, in the area 5 four (♂) to seven (♀) mm broad. Hindwing beneath at the proximal margin speckled grey, particularly behind the discal line. — The larva, according to LAMBORN, is green with white tubercles and lives on a species of ficus. Sierra Leone to the northern Congo

*corax*. District; Uganda, Equatoria and Abyssinia. — ab. ♀ **corax** *Cr.* According to CRAMER's figure the forewing above in the marginal half is one-coloured black and the hindwing above black with a bluish-grey marginal line. Under surface entirely as in *silenus*. Unknown to me; probably only an aberration of the ♀. „Guinea“.

*ficedula*. **M. ficedula** *Trim.* (66 e, i) only deviates from *silenus* by the ferruginous band on the forewing above reaching the margin and the black marginal band on the hindwing above being much narrower particularly in the ♂. It probably only represents the southern and eastern form of *silenus*. Specimens from the intermediate district of the middle Congo, however, are unknown to me. Angola to the Cape Colony and on the eastern coast to the Somali Land. — The larva lives on ficus-species. Eggs emerald-green, ball-shaped.

*sharpei*. **M. sharpei** *Bak.* (66 f). Wings above black; forewing in the posterior longitudinal half of the discal cell and at the base of the areas 2 and 3 dark blue; hindwing with a dark blue transverse band covering the basal part of the areas 2 to 6 and almost reaching the margin in 2. Uganda.

*subornata*. **M. subornata** *Lathy* (66 f) only differs from *sharpei* by the marks stated in the review; in the ♂, however, the blue colour above is more extensive; anal lobe of the hindwing above at the base hemochrome. — Larva on ficus-species. — Nigeria and Adamaua.

*dermaptera*. **M. dermaptera** *Wallengr.* (66 f). Wings above as in the two last species; the blue colour, however, is less extensive and may sometimes be absent altogether in the ♀. — Pupa dark brown. — Natal to British East Africa.

## 5. Genus: **Pseudaletis** *Ham. Druce*.

A very singular genus being quite isolated and peculiar of West Africa. The forewing compared with the hindwing is longer than it is usual in the Lycaenids, and convex at the margin; hindwing with two small tails (at 1 b and 2). The ♀♀ have a posterior body thickened at the end and there covered with densely packed up hair („anal wool“); with these hair the deposited eggs are probably covered.

The stages of development are unfortunately not known. All the species have a „mimetic“ colouring and marking and belong to the greatest rarities of the Ethiopian lepidopteral fauna. They are, therefore, as yet quite insufficiently known.

### Review of the Species.

A. Wings of a reddish-yellow or red-brown ground-colour or black with reddish-yellow markings. Hindwing at the anal angle with three white spots in the black marginal band.

α. Forewing above orange-yellow, at the costal margin and distal margin narrowly, at the apex very broadly black with white submarginal spots in 4 to 6. Hindwing with a black, white-spotted marginal band, at the costal margin not black. *Ps. agrippina*.

β. Forewing above black with an oblique, orange-yellow discal band and two orange-yellow spots in the cell, one at the apex and a triangular one at the base. Hindwing orange, at the costal, distal and proximal margins black. *P. arrhon*.

B. Wings white or yellowish-white (creamy) with black markings or black with white spots.

α. Hindwing above beyond the middle white or creamy without markings (the markings beneath sometimes show through above), at the margin with a black marginal band, at the costal and proximal margins, however, neither darkened nor spotted.

\*. The black marginal band on the hindwing above at the anal angle about 3 mm broad, anteriorly abruptly quickly tapering and terminating pointed at vein 6. *Ps. clymenus*.

*Ps. zebra*.



**\*\*.** The black marginal band on the hindwing above is equally broad or at the costal margin somewhat broader and reaches at least vein 7.

§. Hindwing above without a black transverse band within the marginal band. Forewing above beyond the middle white or creamy with black markings, the black marginal band about 11 mm broad at the costal margin.

o. Forewing with a triangular black spot in the base of area 2. Marginal band on the forewing above with 2 or 3 white subapical spots (in the areas 4, 5 and 6).

1. Discal cell on the forewing above at least as far as vein 2 light yellow. The black discal transverse band on the forewing beneath extends from the costal margin to vein 2. Hindwing beneath without a black transverse line between the proximal margin and vein 1 b, which is subtile black. *Ps. antimachus.*

2. Discal cell of the forewing from the base to vein 2 black with a subtile, white transverse line. The black discal transverse band on the forewing beneath ends at vein 3. Hindwing beneath with a black transverse line extending from the middle of the proximal margin to the middle of vein 1 b and being then continued along this vein to the base. *Ps. mazanguli.*

oo. Area 2 on the forewing above as far as the marginal band white, without spots. Marginal band of the forewing above one-coloured black, without light spots. Forewing above as far as the marginal band white, at the costal margin yellowish brown with two black transverse spots, one in the middle and one at the end of the cell. *Ps. batesi.*

§§. Hindwing above within the marginal band with a straight black transverse band proceeding from the costal margin and being united with the marginal band already at vein 3 and thus separated from the marginal band only in the areas 3 to 7 by a narrow stripe of the ground-colour. Forewing above black with 3 or 4 entirely separate, white spots. *Ps. leonis.*

β. Hindwing above black, in the middle with a white longitudinal stripe proceeding from the base, covering the discal cell and the base of the areas 2 and 3 and ending pointed about 3 mm before the margin. Forewing above black with a white transverse band pointing towards the middle of the margin, between the veins 2 and 6. *Ps. nigra.*

**Ps. agrippina** *Ham. Druce* (66 h). Wings above red-brown, beneath somewhat lighter, reddish-yellow; *agrippina*. forewing with a narrow, black costal margin, a somewhat broader marginal band and a broad, black apical part; white subapical spots in 1 b, 4, 5 and 6; at the middle of the cell, suspended from the costal margin, a small, black transverse spot, a larger, similar spot at the cell-end. Forewing beneath with white spots at the costal margin and between vein 4 and the posterior margin without a marginal band. Hindwing with a marginal band very much narrowed in the middle and spotted white in the areas 1 b, 1 c, 4, 5 and 6. In the ♀ the black marginal band above is almost equally broad with white submarginal spots in all the areas. It resembles *Aletis helcita* and certain species of *Telipna*, and occurs in Cameroon.

**Ps. arrhon** *Ham. Druce*. Forewing above black, with a postmedian, orange-red, slanting transverse *arrhon*. band beginning at the costal margin and ending near the margin; a square, orange-yellow spot at the end of the discal cell and another triangular one at the base, enclosing a black dot. Costal margin between the transverse band and the apex of the cell orange-yellow; a similar streak at the base of vein 1. Hindwing above orange, at the costal, distal and proximal margins black, the abdominal fold, however, light orange-yellow; at the middle of the costal margin a pointed, black spot; three white submarginal spots at the anal angle. Forewing beneath almost as above, but without the orange-yellow streak on vein 1. Hindwing beneath almost entirely orange-yellow; vein 1 b bordered with blackish; at the anal angle some white spots covered with silvery scales. Head orange-yellow. Cameroon.

**Ps. clymenus** *Ham. Druce* (66 h). Forewing above creamy, at the costal margin as far as the discal *clymenus*. cell, at the apex and distal margin very broadly black without light spots; a black transverse spot in the middle and one at the end of the cell are contiguous with the black costal margin. Forewing beneath almost as above. Hindwing beneath yellowish white with black fringes; anal angle ochreous-yellow with two black spots curled silvery white; a fine, black stripe from the proximal margin to vein 1 b encloses a white line and is towards the margin accompanied by a silvery stripe. Cameroon.

**Ps. zebra** *Holl.* is very closely allied with *clymenus* and seems only to differ by the black marginal *zebra*. band on the forewing above being spotted light and by the hindwing beneath not showing any silvery white markings. On the Ogowe River.

**Ps. antimachus** *Stgr.* (66 g). Wings above and beneath of a white ground-colour, at the base and *antimachus*. posterior margin of the forewing and on both sides of vein 1 b of the hindwing tinted somewhat yellowish.



Forewing above at the costal margin as far as the discal cell and vein 6 black, with a fine transverse streak in the cell behind the middle and a thick transverse spot at the cell-end likewise black, these two transverse spots being united at the posterior margin of the cell, covering the base of area 2 and enclosing a round white spot at the cell-apex; marginal band very broadly black with two white subapical spots in 4 and 5; the under surface only deviates by the discal cell being filled up with black, with a white spot at the apex, and by the marginal band being broken up into a curved discal band and a marginal band of only 1 mm width; the ground-colour therefore forms here a broad submarginal band very much narrowed in area 2. Hindwing above with a narrow black marginal band being somewhat broader at the costal margin and enclosing a fine white line at the anal angle; vein 1 b at the base narrowly bordered with black. The under surface only deviates by the marginal band-line being narrow and by a black discal band being triangular at the costal margin and then broken up into small spots, ending at vein 2. Gabun.

*mazanguli*. **Ps. mazanguli** Neave (66 g) is very closely allied to the preceding species. The differences are mentioned in the review of the species and are visible from the figures. Congo District: Lualaba.

*batesi*. **Ps. batesi** Ham. Druce (66 g). The upper surface of the forewing has already been described above; on the under surface the discal cell is blackish-grey as far as the apex, with a narrow white transverse streak behind the middle of the cell, and behind the middle of the wing there are three grey nebulous bands, the two first of which extend to vein 2 and are posteriorly pointed, whilst the third is narrow and reaches vein 1, and a marginal band of 2 mm width. Hindwing on both sides white, above only with a black, unspotted marginal band of 5 mm width, beneath at the margin somewhat greyish, with a fine, dark, almost straight transverse line from the costal margin to vein 2 and a similar submarginal line united with the discal line at vein 2 and continued to the proximal margin as a black line; the areas 1 a and 1 b on the exterior of the submarginal line are yellow with a black dot. Forehead yellow. Camercon: Bitje.

*leonis*. **Ps. leonis** Stgr. (66 g). Forewing on both sides black with a longish, narrow spot of the posterior margin, not or scarcely reaching vein 2, a small spot at the apex of the cell, an anteriorly pointed discal band of the areas 2 to 5 and a posteriorly pointed subapical band, white; the ♂ is without the subapical band above. The hindwing deviates from all the other species by the black discal band described in the review of the species; on the under surface the black marginal band is entirely absent; the discal band is filled up with white, and a thick, black longitudinal stripe extends from the base along vein 1 b to the yellow, black-dotted anal spot. Sierra Leone.

*nigra*. **Ps. nigra** Holl. is distinguished by both wings being above black with white markings; forewing with a white dot at the cell-apex and a slanting discal band being almost vertical towards the middle of the costal margin, white; hindwing above with a white longitudinal stripe from the base to the middle of area 2. Forewing beneath with the same markings as above and besides with a white subapical spot. Hindwing also beneath with the white median stripe and besides with two bluish-white transverse lines beyond the middle; the proximal margin and anal area yellowish olive with two short, silvery bands bordered with black at the proximal margin and at the bases of the small tails one black spot each distally bordered by a silvery blue. Ogowe River.

## 6. Genus: **Oxylides** Hbn.

*Oxylides* is allied with the following genus, but easily discernible by the marks mentioned in the review. The relative length of the three small tails of the hindwing is particularly peculiar of this genus. — Wings in all the species beneath white with a dark transverse line in or a little behind the middle and with three black marginal spots more or less scaled metallic at the anal angle of the hindwing in the areas 1 b, 1 c and 2. In the ♂♂ the wings are above violettish-blue, the apical half of the forewing and the apex of the hindwing being black and the anal region of the hindwing more or less white. There are no hair-pencils, mealy spots or any other similar marks of distinction.

The stages of development are unknown.

### Review of the Species.

A. Both wings beneath in the basal part as far as the discal transverse line one-coloured white without markings. The transverse line of the forewing extends almost exactly in the middle of the wing. Hindwing beneath with another antemarginal transverse line proceeding from the apex or from vein 6 and extending to the end of vein 1 a, but sometimes interrupted in the areas 2 and 3.

α. Hindwing beneath at the anal angle not yellow. The discal transverse line beneath in its whole length brownish-yellow, finely bordered with black. *O. faunus*.

β. Hindwing beneath at the anal angle between the anal spots and the distal transverse line in the areas 1 b to 2 extensively suffused with yellow. The discal line beneath from the costal margin of the forewing to vein 3 of the hindwing black, behind it yellow. *O. bella*.



B. At least the forewing beneath before the middle with a dark transverse line from the costal margin right across the discal cell to the rise of vein 2. The discal line of the forewing extends somewhat behind the middle of the wing. Hindwing beneath without a submarginal line, at the anal angle in the areas 1 b, 1 c and 2 broadly covered with yellow.

α. Hindwing beneath without black transverse lines, only the discal line represented by two fine black lines at the proximal margin. *O. amasa.*

β. Hindwing beneath, as the forewing, at the costal margin with two black transverse lines.

*O. homeyeri.*

*O. melanomitra.*

**O. faunus** *Drury* (68 a). Forewing broad with an obtuse, rounded apex, above in the ♂ violettish-blue, at the apex and distal margin very broad black; in the ♀ one-coloured blackish-brown. Hindwing above in the ♂ blue with a black apex and a blackish-grey proximal margin, in the areas 1 a to 2 with black marginal dots and white submarginal spots, in the ♀ blackish-grey with large, white submarginal spots in 1 b to 3. Beneath both wings are white as far as the margin with the markings mentioned in the review. Sierra Leone to Angola. — **albata** *Auriv.* (= *feminina* *E. Sharpe*) (67 a) only deviates by the hindwing above being at the proximal margin at least in 1 a white or greyish-white, and at the anal angle much broader white; in the ♀ the white marginal band in area 2 is at least 4 mm broad, and reaches anteriorly to vein 6. Congo District and Uganda. *faunus.* *albata.*

**O. bella** *Auriv.* deviates from *faunus* only by the marks mentioned above and by the more expanded white colour at the anal angle of the hindwing above. On the Kuilu River. *bella.*

**O. amasa** *Hew.* (66 h) is known to me from the original figure evidently representing a ♀. The wings are above white with a black marginal band of the forewing of about 6 mm width at the costal margin, gradually narrowing posteriorly; hindwing at the anal angle a little hued yellow, with two black, white-pupilled marginal dots (in 1 c and 2). Wings beneath white; forewing with a narrow, black marginal band, a black discal band as far as vein 2, and a black transverse streak across the discal cell; hindwing with three black marginal dots in 1 b to 2, a yellow hue at the anal angle and 2 fine black lines between the proximal margin and vein 1 b; no other markings. Old Calabar. *amasa.*

**O. homeyeri** *Dew.* (66 h). ♂. Wings above blue; forewing with a broad black marginal band; hindwing at the costal margin and apex black, at the anal angle in 1 b to 2 narrowly white with the usual three black dots and three white, small tails. Wings beneath white with the markings mentioned in the review. HAM. DRUCE, in his work „Illustrations of African Lycaenidae“, says that he possesses the ♀, but he unfortunately does not describe it. Nigeria and Angola. *homeyeri.*

**O. melanomitra** *Karsch* (66 h), as is shown by the figures, is very much like *homeyeri* and differs only by the black apical spot of the hindwing being larger and its white border-line thicker and continued to vein 6; the small tails are black with white fringes. DRUCE mentions the ♀ also of this species and says that it differs from the ♀ of *homeyeri* by the anal area of the hindwing being broadly covered with orange-yellow. Cameroon. *melanomitra.*

## 7. Genus: **Hypolycaena** *Fldr.*

Both wings have beneath in the marginal half two transverse lines the proximal one of which (the discal band) is broader and extends in the middle or close behind the middle, whilst the other, finer one (the submarginal line) extends close to the margin. At the anal angle of the hindwing beneath there are in 1 b and 2 two black spots more or less scaled metallic, usually proximally bordered by glaring colours. Forehead changing from black to orange-yellow with fine, white, raised lateral margins.

The forewing is more triangular and shows a sharper apex than in *Oxylides*.

The species may be divided into four groups easily discernible according to the following review.

### Review of the Groups of Species.

A. Both wings beneath in the basal half as far as the discal band one-coloured white without markings (very rarely with a dot in area 7 of the hindwing). The discal band is brownish-yellow bordered with black; the submarginal line is blackish. Eyes hairy.

α. The small tail at vein 1 b of the hindwing distinctly longer than the hindwing itself (from the base to the anal angle) and more than twice as long as the small tail at vein 2. — *Zeltus de Nicév.*

First group.

β. The small tail at vein 1 b of the hindwing not longer than the hindwing itself and not twice as long as the small tail at vein 2.

Second group.

B. Wings beneath in the basal halves at least with one transverse streak at the end of the discal cell and with a dot in area 7 of the hindwing. The small tail of the hindwing always shorter than the hindwing itself.

α. Forewing beneath without markings between the base and the transverse streak at the end of the discal cell. Eyes hairy. Third group.

β. Forewing beneath in the middle between the base and cell-end with a reddish-yellow transverse streak continued also on the hindwing to the proximal margin. Eyes bare. Wings in both sexes above mostly blue. — *Hemiolaus subgen. nov.* Fourth group.

### First Group.

Forehead black or blackish with white lateral margins. The wings above are in the ♂♂ more or less reflecting blue, in the ♀♀ blackish-grey or blackish-brown with white spots at the anal angle or before the margin of the hindwing. The ♂♂ usually without a hair-pencil and mealy spots, rarely with a minute mealy spot at the base of area 2 and vein 1 of the forewing above.

### Review of the Species.

A. The discal band of the forewing beneath is at the posterior margin much farther distally removed than the discal band of the hindwing and therefore does not converge with the latter, but with the submarginal line of the hindwing. The black spot scaled greenish in the anal lobe of the hindwing beneath without any red bordering.

α. ♂. Forewing above with a faint blue reflection; hindwing above without white spots in the areas 2 and 3 or only with a small marginal spot in area 3. ♀. Wings above with a blackish-grey ground-colour. Hindwing above at the margin as far as vein 3 or 4 with 2 (or 3) white bands. *H. hatita*.

β. Forewing above blackish; hindwing above with a white spot in area 2 about 3 mm distant from the margin and with two white spots in area 3, the proximal one being much smaller or indistinct. — ♂. Wings above with a faint bluish-violet reflection. ♀. Wings above without a blue reflection.

*H. nigra*.

B. The discal band on the forewing beneath is always situated exactly in the prolongation of the discal band of the hindwing. The black spot of the anal lobe of the hindwing beneath towards the base and towards vein 1 b bordered by a red spot.

α. A larger species with an expanse of 28 to 29 mm. — ♂. Forewing above in the basal half faintly greyish-blue with a slight reflection; beneath as far as the posterior margin white. *H. antifaunus*.

β. Smaller species with an expanse of 20 to 24 mm. — ♂. Forewing above black, at least as far as the middle with a blue or greenish reflection, beneath at the posterior margin in the areas 1 a and 1 b extensively covered with black; above at the base of vein 1 with a narrow, strigiform, mealy spot covered with brown hair.

\*. The white proximal margin of the hindwing above is very broad, penetrating more or less into the area 2, where it is in the ♂ covered with blue. — ♂. Forewing above without a mealy spot in area 2. *H. lebona*.

\*\*. The white proximal margin of the hindwing above is narrower and anteriorly bordered by vein 2. — ♂. Forewing above in the angle between vein 2 and the median with a minute, triangular, brown, mealy spot. *A. dubia*.

*hatita*. **H. hatita** Hew. (68 b). ♂. Wings above blackish with a blue reflection, particularly on the hindwing; the hindwing at the proximal margin as far as vein 2 grey and white with a white submarginal spot in 1 c. ♀. Wings above blackish-grey without a blue reflection; the transverse lines beneath showing through as dark lines; hindwing with white marginal spots in 1 c and 3 and white submarginal spots in 1 c to 3. To the description of the under surface mentioned above we may only add that the forewing is rather broadly darkened at the margin. Sierra Leone to Angola and Congo District. — **ugandae** E. Sharpe is unknown to me and somewhat indistinctly described, but it seems only to differ from the type by the wings beneath being white as far as the margin without a dark marginal band. Uganda; Kiwu and Ukerewe.

*nigra*. **H. nigra** Ham. Druce (68 b) was already figured by HEWITSON as *hatita* (fig. 23), but it was only in this year established as a separate species by DRUCE. It is easily recognized by the white spots of the areas 2 and 3 on the hindwing above. Larva green, shaped like a wood-loose. Sierra Leone to Cameroon.

*antifaunus*. **H. antifaunus** Dbl. & Hew. (68 b). ♂. Both wings above in the basal half as far as the discal band showing through from beneath distinctly covered with a greyish blue; hindwing above with the same white spots as in *nigra*-♂. The ♀ is above similar to the ♂, but somewhat lighter. The under surface is described in the review. Sierra Leone to Angola and Uganda.



**H. lebona** Hew. (67 a, 68 b). ♂. Both wings above as far as beyond the middle dark blue, at the margin broadly black; the proximal margin of the hindwing as far as or almost as far as vein 3 scaled white or light blue. Under surface marked almost exactly as in *antifaunus*. Sierra Leone to Congo and Toro. — The larva is of a bright green, the opening of the dorsal gland encircled by red; it is visited by ants of the genus *Pheidole*. — ab. **scintillans** Auriv. only deviates by the ♂ wings being black on being seen from above, with a blue reflection on being very slantingly seen from the side. Cameroon. — ab. **caerulea** Auriv. has the black marginal band of the forewing only about 2 mm broad and almost equally broad; the hindwing above almost as far as the margin blue, only at the apex narrowly black. Cameroon.

**H. dubia** Auriv. (68 b) is very much like the preceding species; the differences are stated in the review of the species. In the ♂ the wings are above black, as far as beyond the middle with a very dark blue reflection. In the ♀ the wings are above blackish-grey without a reflection; hindwing in 1 a and 1 b white and with white spots in 1 c, 2 and 3, and a fine, white marginal line from the anal angle to vein 4. Cameroon.

### Second Group.

The two species of this group are closely allied to those of the preceding group and only differ by the shorter small tail at vein 1 b of the hindwing. In the ♂ the forewing above has at the end of the discal cell a distinct, rounded, grey mealy spot covering the bases of the veins 3 to 5; both wings above at least in the basal part blue; the costal and distal margins of the forewing black. The under surface in both sexes coloured and marked almost exactly as in *H. antifaunus*.

#### Review of the Species.

1. The anal lobe of the hindwing above spotted red. Wings above in the basal parts greyish-blue.  
*H. liara*.
2. The anal lobe of the hindwing above black without red scales. Wings in the ♂ above azure-blue.  
*H. naara*.

**H. liara** Ham. Druce (67 a). Hindwing above with a dark discal and submarginal band. — ♂. Wings above black; forewing in the basal third scaled light greyish-blue; hindwing from vein 4 to the proximal margin scaled light bluish-grey. In the ♀ both wings are above in the basal halves covered with a bluish-grey; the areas 1 b to 4 of the hindwing are decorated with two transverse rows of white spots and a white marginal line. Ashanti to Congo, Uganda and Kavirondo.

**H. naara** Hew. (67 a). ♂. Wings above of a beautiful azure-blue; the costal and distal margins of the forewing narrowly black, only about 1 mm broad; hindwing with a fine, black marginal line and white fringes. ♀ unknown. Angola.

### Third Group.

Both wings beneath show a distinct transverse streak at the end of the discal cell, and the hindwing besides a dot at the base of the area 7. The eyes are hairy and the small tails of the hindwings rather short and almost equally long. The ♂♂ have no hair-pencil nor mealy spots.

Some species which I place in to this group are unknown to me and insufficiently described, and it is therefore possible that they do not belong to this group.

#### Review of the Species.

- A. Wings above with a black, dark brown or grey ground-colour.
  - α. Both wings above black. Hindwing with some blue scales in the fold and on the anal lobes. Fringes of forewings black, of the hindwings white.  
*H. moyambina*.
  - β. Wings above dark brown with a violet or coppery lustre (♂) or in the ♀ grey or blackish-grey with white markings at least on the hindwings.
    - \*. The discal band beneath on both wings similarly developed and moderately broad.
      - §. Forewing on both sides or at least beneath at the costal margin broadly golden yellow or orange-yellow.  
*H. auricostalis*.
      - §§. Costal margin of the forewing not coloured yellow.
        - o. The transverse streaks at the end of the discal cell on the under surface are grey or blackish, filled up with white, rarely on the forewing with a narrow, brown streak.  
*H. philippus*.  
*H. kadiskos*.



oo. The transverse streaks at the end of the discal cell on the under surface are red-brown or yellow, bordered with white or dark.

1. Wings beneath with a grey ground-colour and thick discal band.

*H. pachalica.*

*H. aureolineata.*

2. Wings beneath with a grey ground-colour and fine, yellow transverse lines.

*H. buxtoni.*

\*\* Hindwing beneath with a very broad, orange-yellow discal band being reddish at the costal margin; that of the forewing is only feebly indicated.

*H. vittigera.*

B. Both wings above dull orange-red with a black marginal band.

*H. jacksoni.*

*moyambina.* **H. moyambina** Baker was described according to a single ♂ and is unknown to me. The description says: „Both wings black; hindwing with traces of a short fine spot of blue scales in the fold and on the anal lobe; fringes of the forewing black, of the hindwing behind the apex white; thorax and abdomen with traces of some few blue scales. Both wings beneath whitish, forewing at the apex and margin covered with grey; a red-brown mealy spot behind the discal cell; an orange-red discal band bordered with brown, and a fine, interrupted submarginal line distally bordered with white; the discal cell at the end with a white transverse streak bordered with brown; hindwing with a scarcely noticeable transverse streak at the end of the discal cell and a broad, orange-red discal band bordered with dark, not undulated as far as vein „1“, but then dentate W-shaped as far as the proximal margin; a fine, undulate submarginal line and outside of it a series of grey spots; a black marginal line; a velvety-black spot of the anal lobe is surrounded with blue scales and proximally bordered with red; a large, black marginal spot curled red in the area 2 between the small tails being bordered with white; a white spot in 1 c.“ Expanse of wings: 28 mm. Sierra Leone.

*auricostalis.* **H. auricostalis** Btlr. (68 b) is distinguished by the orange-yellow costal margin of the forewing. BUTLER only knew the ♀; *H. frommi* (68 e) described later on by STRAND is most likely the ♂ of BUTLER's species. ♂. (According to STRAND) most closely allied with *H. philippus*; a very interesting fact is that this ♂ is most similar to the ♀ of *philippus*, though it differs by the following marks: the upper surface of all the wings with a leaden reflection, but without any violet tint, the white submarginal spots in the areas 3, 4 and 5 of the hindwing are a little nearer at the margin and their row converges posteriorly with the margin (in *philippus* parallel), the black marginal spot in area 2 is in *philippus* proximally quite narrowly and indistinctly bordered with orange-yellow, whereas in *frommi* there is an orange-yellow spot which is even larger than the black marginal spot; besides the black marginal spots are a little smaller and more ellipsoid and the angle formed by the margin at vein 3 less distinct, whilst the black anal spot which is proximally dusted greenish in *philippus*, shows here orange-yellowish dusting. Under surface darker than in *philippus*-♀, of an ashy grey with similar markings, but the two transverse bands of the forewing are parallel (in *philippus* posteriorly divergent) and also anteriorly a little more remote from each other; the two bands of the hindwing are less regular than in *philippus* and at the veins more distinctly interrupted; all the bands, also those of the forewings less sharply marked and, like the basal spot of the hindwing devoid of red, but with orange-yellowish dusting, the two black marginal spots, however, are proximally bordered by one bright, orange spot each. Another characteristic mark is that the costal margin of the forewing is orange-yellow almost to the apex. — The ♀, according to BUTLER, is closely allied with *philippus*, above ashy-grey; forewing with a (particularly at the base) light golden ochreous-yellow costal margin; veins dark; margin smoke-coloured grey; an antemarginal, curved row of six whitish discal spots increasing in size; a whitish ring-spot at the anal angle; hindwing almost as in *philippus*, but at the distal, small tail with a much larger, more light orange-yellow spot. Under surface whitish with dark grey markings bordered with white and hued orange-yellow at the proximal margin. Nyassa Land.

*philippus.* **H. philippus** F. (67 a). Wings above dark brown, in the ♂ with a faint bluish or violet reflection; forewing unmarked; hindwing with a black submarginal spot in 1 b, 1 e and 2, of which the spot in 2 is proximally bordered by an orange-red spot; the black border-line is proximally bordered with white; the ♀ has besides two antemarginal transverse rows of white spots, the distal one of which consists of 3 (or 4) spots in the areas 3 to 5 (or 6) and the proximal one of 3 or 4 spots of the areas (1 c) 2 to 4 (and 5); the distal one of these rows of spots is sometimes faintly indicated also in the ♂. Wings beneath grey or whitish with orange-yellow markings; forewing with a transverse streak at the cell-end, an almost straight discal line and a fine submarginal line; the hindwing with a basal dot in 7, a transverse streak at the cell-end, a somewhat irregular discal line angularly broken in 1 e towards the proximal margin, and a fine submarginal line which is thickened and more distinct at the proximal margin in 1 b; hindwing besides with rounded, black marginal spots in 1 b and 2, the former being dusted blue, the latter proximally bordered with a reddish yellow; the area 1 c at the margin only somewhat darkened, grey and with some blue scales; the yellow discal lines are sometimes very finely bordered with blackish. The larva, according to LAMBORN, is visited by ants of the genera *Pheidole* and *Campotonus*. A common species occurring in the whole Ethiopian region.



**H. kadiskos** *Ham. Drc.* is unknown to me. The description says: „Upper surface dull brownish-violet; hindwing near the anal angle with three indistinct black marginal dots being towards the base bordered with white; proximal margin brownish with small white hairs. Under surface brownish-white, with a brown discal band and the other markings as in *hatita*, but besides with a brown transverse streak at the cell-end of the forewing and a small brown spot at the costal margin of the hindwing near the base; fringes white; the small tails much shorter than in *hatita*. Head, thorax, and abdomen brownish; legs and antennae white with black rings. This species resembling *H. buxtoni* (67 b) above seems beneath to form the intermediary between *hatita* and *philippus*.“ *Lagos*. This description does not state the difference of *kadiskos* from *philippus*.

**H. pachalica** *Btlr.* (67 b) \*) is above very much like *H. philippus* and only different by a somewhat larger reddish-yellow spot in the area 2 within the black marginal spot. On the under surface it is distinguished by the thick bright yellowish-red discal bands and transverse streaks at the apices of the discal cells; they are bordered with white, and the space between the discal band and the submarginal line of the hindwing is often more or less covered with white; otherwise the under surface is also very much like that of *philippus*. German and British East Africa as far as Wadelai in the equatorial province. — **aureolineata** *B.-Bak.* is unknown to me, but according to the description it agrees so exactly with *pachalica* that it is probably only a form of it. BETHUNE-BAKER describes his species as follows: „Antennae brown, curled white. Both wings brown with a purple mauve lustre, which colour is much lighter on being seen from the side; margin narrow black; hindwing with three black anal spots; the first and second proximally finely bordered with white, the third proximally with an orange spot. Both wings beneath bright stone-coloured grey with bright golden orange spots and transverse bands being finely bordered with black and white. Forewing at the cell-end with an orange spot, the black bordering of which is hardly noticeable; discal band broad, upright, gradually somewhat thickened from the costal margin to vein 2, then quickly tapering off and somewhat darkened; submarginal line much thinner; the space between these lines whitish; margin narrow orange-yellow. Hindwing with a subbasal spot and a transverse streak at the cell-end; discal band broad, angularly broken before vein 1 b and ending at the proximal margin; the submarginal line narrower, but like the discal band broken at vein 1 b; the space between these two lines whitish; a dark nebulous band between the submarginal line and the margin, the latter orange; the anal spot black with metallic scales and proximally accompanied by a light orange spot \*\*); a black dot proximally bordered with orange is in area 2; two small, fine tails.“ *Uganda: Toro*.

**H. buxtoni** *Hew.* (67 b) is closely allied with *philippus*, but at once discernible by the purely white ground-colour beneath and the finer yellow transverse lines beneath. Besides both wings in the ♂ above are of a bright violettish-blue, and in the ♀ the forewing exhibits above a broad, somewhat irregular, white discal band which, however, does not reach the costal margin, whilst the hindwing is white in the marginal half with three blackish transverse lines. *Cape Colony to the Nyassa District*.

**H. vittigera** *Mab.* is a very rare species of Madagascar, of which only one specimen is known hitherto. Wings above dark brown, in the middle with a slight greyish hue; hindwing at the margin rather broadly bluish-grey with dark marginal dots, of which those in 1 b, 1 c and 2 are somewhat larger and black; the dot in 2 is proximally broadly bordered with orange-red. Both wings beneath of a white ground-colour; forewing beneath with an indistinct transverse streak at the end of the discal cell, a very indistinct, nebulous discal band, an undulate submarginal line and a fine, according to the description blue, according to the figure reddish marginal line; hindwing beneath with a red basal dot in 7 and with a discal band of 2 to 3 mm width being red in the area 7 and then yellow; the submarginal line is absent and the marginal line very fine; marginal dots very small and only developed in 1 b, 1 c and 2, those in 1 b and 1 c surrounded by a bluish grey and that in 2 proximally bordered by a light yellow.

**H. jacksoni** *B.-Bak.* (68 c) is only known in the male and differs from all the other species by the colouring. Wings above dull orange-red in a certain light with a faint purple reflection; forewing with a very broad marginal band; hindwing with a rather broad dark marginal band quickly tapering off towards the anal angle; anal angle bluish white, anal lobe margined with yellow; first small tail long, the second small tail shorter. Both wings beneath as far as the margin purely white; forewing with a slanting, orange-red transverse streak from the costal margin to the base of vein 2 and a postmedian, slanting, undulate, orange-red transverse band ending at vein 1; a fine, slightly bent, dark submarginal line. Hindwing with an orange-red, short basal spot in area 7, a slanting, orange-red transverse streak as far as vein 2 behind which it is continued as a black line, and a fine, feebly dentate discal line turning posteriorly towards the proximal margin; a black dot proximally bordered with yellow in 2, the spot in 1 b black narrowly bordered with yellow, and a light, metallic blue spot nearer to the margin; marginal line finely black. *Uganda: Toro*.

\*) Figure 67 a does not represent a typical *pachalica*.

\*\*) This spot is little distinct or absent in specimens of *pachalica* lying before me.



## Fourth Group.

The species of this group are distinctly separated from the other groups by the marks stated in the review and somehow form a transition to *Iolaus*. In case they are to be considered as a separate genus or subordinate genus, I propose the name *Hemiolaus* for it.

Frons red with fine white lateral margins and a dark, notched median line. The ♂♂, as far as they are known to me, agree with those of *Iolaus* by the posterior margin of the forewing forming before the middle a large, broad lobe which covers a dark mealy spot in the discal cell of the hindwing; they deviate, however, by the hair-pencil not being fastened on the forewing beneath but on the hindwing above near the base of area 1 c and being turned forward. Hereby the ♂♂ can be distinguished from all the other African *Lycaenidae*.

## Review of the Species.

A. Hindwing beneath in area 8 unmarked or only with an incomplete red transverse streak or an irregular red spot.

α. The basal transverse band of the hindwing beneath coherent or almost coherent, not broken up into spots. In the ♂ the blue colouring above is almost similar on both wings.

\*. Ground-colour beneath at the base and at the margin more or less covered with brown or dark grey, between the discal band and the submarginal line whitish. Small tails red, bordered with black.

*H. ceres*.

*H. dolores*.

\*\*. Wings beneath of a monotonously whitish or whitish-grey ground-colour. The small tails not or scarcely red.

*H. coeculus*.

β. The basal transverse band of the hindwing beneath broken up into 4 red-brown, far separated spots or dots (in 1 a, 1 b, 7 and the discal cell). In the ♂ the forewing is above darker and more violettish-blue than the hindwing, and the blue colour is rounded off opposite the apex of the wing, not transversely cut off or emarginated; the blue colour of the hindwing reaches vein 7.

*H. cobaltina*.

B. Hindwing beneath in area 8 with two far remote, red-brown or blackish brightly surrounded dots.

*H. maryra*.

*ceres*.

**H. ceres** Hew. (67 b) was described and figured (of which we give a copy) by HEWITSON according to a ♂ from the Zululand in BOISDUVAL's collection but hereafter it has always been a riddle. I formerly regarded the species to be an *Iolaus*, but after having now become acquainted with *H. dolores* described by SUFFERT, I am convinced that *dolores* and *ceres* must be very closely allied and perhaps even synonymous. *ceres*, in fact, seems only to differ from *dolores* by the discal band of the forewing beneath not being straight, but distally bent in the areas 4 and 5. — **dolores** Suff. (67 b). Forewing above blue, at the costal margin narrowly, at the apex very broadly, and at the distal margin in 3 to 1 a about 2 to 3 mm broad black; the blue colour is hereby more or less deeply emarginated in the areas 4 and 5; the indentation at the base of the posterior margin is steel-coloured grey and set with silvery grey hairs. Hindwing above in the areas 1 c to 4 and partly also in 5 as far as the margin blue, with black marginal dots in 1 c and 2, a black marginal line and blackish-grey fringes being white at the base; areas 1 a and 1 b grey, the discal cell and areas 5 to 8 blackish, in the ♂ with a lustrous mealy spot in the cell and a black hair-pencil in 1 c; anal lobe greenish, with yellow, red and white scales; the ♀ only differs by its lighter, whitish-blue colour. The under surface is more or less darkened, particularly at the base and at the anterior part of the margin, and it has the same red transverse markings as in *coeculus*. Delagoa Bay to German East Africa.

*dolores*.

*coeculus*.

**H. coeculus** Hpffr. (67 b). ♂. Forewing above of a beautiful violettish-blue, at the costal margin narrowly, at the apex and distal margin very broadly black; the blue colour is hereby distinctly sinuate in the areas 4 and 5 and does not cover the whole basal half of area 3; in area 2 the black marginal band is about 3 mm broad and grows still broader towards the posterior margin. On the hindwing the blue colour covers the areas 1 c to 4, but in 1 c and 2 it is interrupted by very large, black marginal spots, and in 3 and 4 separated from the margin by the black marginal band; areas 1 a and 1 b grey, discal cell and areas 5 to 8 black. The ♀ is larger and differs above by the blue colour being lighter and less extensive, on the hindwing it is generally anteriorly bordered by vein 4. On the under surface the ground-colour is almost uniformly grey with distinctly prominent red or brownish-red transverse bands or streaks being at least towards the base finely bordered with black; a basal transverse band across the discal cell of the forewing and from vein 8 of the hindwing to the proximal margin, a transverse streak at the end of the discal cell on both wings, a discal band being almost straight on the forewing and interrupted in the hindwing at vein 2 and angularly broken in area 1 c, and a submarginal line, which is red as far as the 4th, or 3rd vein and behind it finer and black; a thick red marginal line, the black marginal spots of the areas 1 b and 2 towards the base broadly (as far as the submarginal line) bordered with yellow. Southern Congo District and Angola to Manicaland, Nyassaland



and German East Africa. — ab. *obscura* Suff. deviates by the red bands and streaks beneath of the typical *obscura*. form being here brown (♂) or black (♀). In the ♀ the black colouring above is besides more expanded. German East Africa near Mhonda.

**H. cobaltina** Auriv. (= *coeculus* Mab.) (67 c) is in Madagascar the representative of *coeculus* and *cobaltina*. easily recognizable by the marks stated in the review. A remarkable fact is that the dark blue colour of the ♂ forewing above is in the areas 4 and 5 distally more prominent than in *coeculus* and rounded off hereby the black marginal band is almost equally broad as far as vein 6 or 7.

**H. maryra** Mab. is unknown to me, but according to the figure above and beneath very much like *maryra*. the preceding species and it chiefly differs only by the two red dots bordered with light in area 8 on the hindwing beneath and the less bright red transverse markings beneath. Of the two dots of area 8 on the hindwing one is situate within the dot in area 7 and the other in a straight line with the transverse streak at the end of the discal cell; the discal band of the forewing beneath is undulate, but as in *cobaltina* almost straight. Madagascar. — **mabillei** nom. n. (= *ceres* Mab., non Hew.). Between MABILLE's figures of *maryra* and „*ceres*“ *mabillei*. I can only discover the difference that in „*ceres*“ the discal band of the forewing beneath forms a large distal prominence at vein 5, and that the same band on the hindwing is almost dissolved into thick streaks in the areas 4 to 6. In the ♀ the blue colour above is lighter, less extensive and at the end of the cell of the forewing decorated with a white spot. This form is probably only a race or a variation of *maryra*. Madagascar.

**H. margites** L. Mab. is unknown to me, but according to the description it is presumably most *margites*. closely allied with *ceres* (*dolores*) (67 b). „Smaller than *ceres* Hew.; forewing black with a dark blue lighter part at the posterior margin; hindwing except the costal margin almost entirely blue; both wings beneath red-brown, forewing a little behind the middle with a white transverse line, behind it the marginal part is greyish-violet towards the apex and red-brown at the anal angle; the violet part is strewn with small, red transverse strigae, area 1 b bluish and lustrous; fringes grey and accompanied by a red marginal line. Hindwing beneath coloured as forewing and with a white transverse line parted by the red discal line; at the base there are two red transverse lines: one at the cell-end, and another, undulate one nearer at the base; both are continued on the forewing; the marginal part is light grey with a red submarginal line, at the costal margin more whitish, towards the anal angle reddish; the latter terminates into a long, small tail showing a brownish-red spot at the base; marginal line red.“ Madagascar.

## 8. Genus: *Stugeta* Drc.

The species of this genus were formerly enumerated in the *Iolais* from which they deviate by the forewing having only 10 veins, veins 8 and 9 being absent. Thereby they agree with *Hypolycaena* from which, however, they differ by somewhat thicker antennae with shorter joints. Frons broad, white, in the middle longitudinally grooved. Palpi long, with smooth appressed scales, without bristles. Antennae rather thick, gradually thickened with a long, circular club. Anterior tibiae on the inside with stiff bristles. Marking abundant; transverse lines beneath sharply dentate. Sexes similar to each other. The ♂ without any mealy spots or hair-pencil.

The dark markings beneath rather closely resemble those of *Hypolycaena coeculus* (67 b). The forewing has a spot at the base of the cell, a transverse line across the middle of the cell as far as vein 1, a transverse streak at the cell-end, a generally very thick irregularly broken discal band, a fine submarginal line and a thick marginal band. The hindwing has a transverse line across the middle of the cell, reaching veins 8 and 1 b at which it turns round towards the base, a transverse streak at the cell-end, a sharply dentate discal line or discal band, a fine undulate submarginal line generally expanded like spots in the areas 6 and 7, and a marginal line. These markings are entirely separated only in *marmorea* (68 c) and are strongly thickened in the other species and more or less flown together.

## Review of the Species.

### I. Wings above with a white ground-colour or with several white spots.

A. The dark discal band of the forewing is on both sides, from the costal margin to vein 2 or 1, broad and coherent, its spots in 5 to 7 always smaller than that in 4. Wings above as far as beyond the middle light blue, in the middle and in the marginal half with separate white spots.

α. The discal band of the hindwing beneath is not or moderately thickened and everywhere separated by a broad band of the white ground-colour from the submarginal line. *S. bowkeri*.

β. The almost black discal band of the hindwing beneath is united with the basal band by a transverse spot at the costal margin in area 7, and in the areas 3 and 4 it forms two very large spots 4 to 5 mm broad, reaching to the submarginal line. *S. maria*.



- B. The dark, slanting discal band of the forewing is straight and almost equally broad from the costal margin to vein 3, but in the areas 2 and 1 b it is continued merely as a narrow transverse streak, being much nearer to the base. Both wings above at least in the ♀ far beyond the middle white with or without a blue reflection.†

*S. marmorea.*

II. Wings above without any white markings at all.

*S. mimetica.*

*S. bowkeri.* Forewing above as far as beyond the middle light blue with white longitudinal spots at the base of the areas 4 and 5 and white postdiscal spots in 2 to 6, of which those in 3 and 4 are small or absent; behind these spots and the blue colour in 1 a and 1 b follows a black, almost equally broad marginal band of about 3 mm width, the white postdiscal spots are separated from the blue colour by the black discal band. Hindwing above as far as the margin light blue with a large, black spot at the apex, a black discal band from the costal margin to the third black, small submarginal luna and black marginal spots; between these black markings there generally appear white postdiscal and submarginal spots; a fine, black marginal line proximally bordered with white. Wings beneath of a white ground-colour, and the transverse markings mentioned above are varying from brown to blackish. — In the typical form **bowkeri** *Trim.* (67 c) on the under surface the space between the submarginal line and the margin is not or scarcely darkened, and the discal band of the forewing does not reach the submarginal line. Angola to Cape Colony and British East Africa. — ab. **subinfusca** *Grünb.* (nyanzana *Wichgr.*) (67 c) only deviates by both wings exhibiting beneath a broad, dark grey marginal band proximally bordered by the submarginal line, the discal band of the forewing reaching the submarginal line in the areas 3 and 4, and the basal part of the hindwing being more or less completely filled up with dark grey between the transverse lines. Damara to Victoria-Nyanza, among the typical forms. — **mombasae** *Btlr.* is described as follows: „Larger and bluer than specimens from Natal, the black colour of the forewing besides more expanded, the white spots thereby smaller. Beneath the ground-colour is white, almost without any grey admixture, and the dark markings more red-brown or orange-red.“ British East Africa and Mombasa.

*S. maria.* **S. maria** *Suff.* is very closely allied to the preceding species and only differs by the marks stated in the review. Angola to Nyassaland.

*S. marmorea.* **S. marmorea** *Btlr.* (68 c) is known to me only in the female. Both wings above white, at the base not or scarcely blue; forewing with a blackish-grey, equally broad marginal band of about 3 mm width, and a slanting, black discal band ending transversely at vein 3; moreover, the dark markings beneath show a little through; hindwing above with a blackish-grey apical spot, a submarginal line formed of bows, and close in front of the margin in 3 to 5 with a thicker, coherent transverse line; black marginal spots in 1 b to 2, those in 1 b and 1 c being scaled silvery blue. Under surface white with fine transverse lines; only the transverse line of the forewing beyond the middle of the cell and the discal band of the forewing in 3 to 8 are thick and blackish; on the hindwing a conical, blackish submarginal spot in 6; marginal spot of area 1 c on the hindwing represented by a grey nebulous spot with metallic scales. In the northern part of the Ethiopian region from Ashanti to Adamaua and the White Nile.

*S. mimetica.* **S. mimetica** *Auriv.* Above in both sexes strikingly resembling *Iolaus nursei* (69 b, c); in the structure of the veins and the other markings, however, agreeing with *Stugeta*, and beneath with a marking similar to that of the other species of *Stugeta*. Distinguished from all the other species of the genus *Stugeta* known by the absence of all the white markings above. ♂. Wings above of a beautiful sky-blue; forewing at the base of the costal margin bluish-grey, at the apex very broad (about 9 mm) black, and beginning from vein 3 with a black marginal band of about 3 mm width; hindwing at the costal margin only as far as vein 7 black and at the apex in the areas 5 and 6 with a black apical spot of 4 mm width, then with a fine black marginal line proximally bordered with a bluish, white line; black submarginal streaks or dots in 1 c to 5; anal lobe white with a black dot bordered by some lustrous metallic scales; fringes white, on the forewing in some places darkened and between the anal angle and vein 2 with broad black apices. The areas 1 a and 1 b scaled whitish. The ♀ above almost entirely like the ♂, only distinguished by somewhat lighter blue and less deeply black colouring. Both sexes beneath with a violettish-grey ground-colour and the same dark reddish brown markings. The ground-colour is in the ♂ little, in the ♀ rather densely strewn with reddish-brown scales and appears therefore in the ♀ much darker than in the ♂. The marking consists on the forewing of a transverse line in the basal part, being angularly broken at the median and approaching the cell-end, a transverse streak at the cell-end, a very broad, coherent and almost straight discal transverse band, and an almost straight submarginal line; these are often connected with each other by a brown nebulous spot of the areas 3 to 5; between the submarginal line and the fine brown marginal line dark streaks are more or less distinctly prominent. The hindwing has the very same markings; the transverse lines, however, are finer, in the areas 1 b and 1 c angularly broken, and the discal band is thickened only between the veins 2 and 7; the submarginal line, however, forms a large, deep black spot in the area 6, and a smaller similar spot in 7; a black marginal spot bordered by metallic lustrous



scales in 2 and on the anal lobe, the eye-spot in 2 proximally narrowly bordered with an ochreous yellow; in area 1 c there appear two accumulations of metallic scales. Frons white with a yellowish-grey median groove. Legs white, above spotted dark. Palpi white, at the tips blackish. Expanse 30 to 31 mm. German East Africa near Madibira.

### 9. Genus: **Trichiolaus** *Auriv.*

Eyes densely haired. The last joint of the palpi shorter than the second. Forewing in the ♂ with 12, in the ♀ with 11 veins. Hindwing with three small tails (at the veins 1 b, 2 and 3), the last very short. It only differs from *Iolaus* by the haired eyes.

**T. mermeros** *Mab.* <sup>67c</sup>♂. Forewing above black in the basal part almost as far as the apex of the discal cell and as far as vein 3 bright blue with a silvery lustre; the blue colour in 1 a to 2 separated from the margin by a black marginal band of only 2 to 3 mm width; hindwing above as far as the margin of a beautiful blue, areas 1 a, 1 b, and the costal margin blackish, the black costal-marginal band expanded at the apex, almost reaching vein 5, large, black marginal spots in 1 b to 2, that in 1 b with yellow and lustrous scales. Both wings beneath blackish-grey; forewing with a fine, short transverse streak bordered with white, at the cell-end, a fine black discal line proximally bordered with white, and a submarginal line dissolved into white dots; hindwing with two black basal dots surrounded with white, one in the cell and one in 7, a small black dot in 1 a, a black discal line being straight at the costal margin and proximally broadly bordered with white, and 2 or 3 irregular, white transverse lines in the marginal part; a black dot decorated with golden lustrous scales in the anal lobe and a black marginal dot in 2 proximally broadly bordered with orange-red; area 1 c at the margin whitish with two dark nebulous spots. The ♀ differs above from the ♂ by the basal part of the forewing being blue only in 1 a, 1 b and the discal cell, in area 2, however, white and smaller than in the ♂; the under surface is somewhat lighter than in the ♂. Madagascar. *mermeros.*

**T. leucoceros** *Oberth.* (67c) only deviates by the transverse line of the hindwing beneath being somewhat bent at the costal margin and in the ♂ towards the base very broadly bordered with white; in the ♀ the basal part of the forewing above is nearly all white, and the ground-colour beneath purely white. Madagascar. *leucoceros.*

### 10. Genus: **Dapidodigma** *Karsch.*

Eyes bare. Palpi long, almost smoothly scaled. Vertex with bristly scales. Antennae rather thick with short joints and only gradually passing over into a circular, little thickened club. Anterior legs especially in the ♂ almost to the tips densely long-haired. Forewing with 11 veins and an almost straight margin. Hindwing with three small fine tails (at 1 b, 2 and 3), of which that at 1 b is shorter or at least not longer than that at 2). Margin of hindwing between the anal angle and vein 3 broadly extended, then angularly incised.

The species, which is known long ago though very rare, is easily discernible from the allied *Iolaus*-species by the marking of the under surface showing numerous fine transverse lines on a dark ground. In the ♂ the hindwing above shows in the middle a large, indistinctly defined, pale yellowish mealy spot.

**D. hymen** *F.* (68 c). ♂. Forewing above black with a narrow, bluish-white inner-marginal spot covering the basal half or somewhat more than half of the areas 1 a and 1 b and the basal third of the discal cell, and ending at the rise of vein 3; hindwing above bluish-white with a small black apical spot of about 2 mm width and 5 mm length, and a fine black marginal line; fringes white, at the proximal margin long and brownish; the pale yellow mealy spot almost covers the whole discal cell and the base of the areas 2 to 5; forewing at the proximal margin with long white hair. Both wings beneath blackish-brown with numerous fine, white transverse lines and transverse streaks as is best seen on the figure; hindwing generally before the middle with a slanting white transverse stripe from the middle of the costal margin towards the proximal part of the proximal margin. The ♀ differs above by the whole basal half of the forewing being white as far as the costal margin and a little beyond the cell-apex and by the black apical spot of the hindwing being much larger. Sierra Leone to the Kongo River. *hymen.*

### 11. Genus: **Iolaus** *Hbn.*

To this numerous genus belong the largest and finest representatives of the *Lycaeninae* in Africa. All the species are confined to the African continent (with Fernando Po) and Arabia, and are entirely absent in Madagascar, the Comoro and Mascarene Islands, and in the other small islands in the Indian Ocean. A single species penetrates into the palearctic region in Palestine. Eyes bare, palpi long, with appressed smooth scales. Antennae strong with short, very indistinct joints; towards the apex only very feebly and gradually thickened with a circular, not deposited club. Forewing in the ♂ with 11 or 12 veins, in the latter case vein 7 always terminates into the margin; in the ♀ always with 11 veins and with vein 7 into the apex or costal margin.

Hindwing with 2 or 3 small tails (at 1 b, 2 and 3); the small tail at 1 b always longer than the others, that at vein 3 short or absent. Anterior legs with appressed scales, not long-haired.

HAMILTON H. DRUCE tried already in 1891 to divide the numerous species into several genera. But as these „genera“, except *Stugeta* (see above on p. 387) and *Tanuetheira*, are founded on marks occurring only in the ♂♂, it is impossible to ascertain the generic position of a ♀. Such genera that are only founded on one sex I cannot regard as being justified. Moreover it seems to me to be doubtful whether for instance the species of *Argiolaus* are really more closely allied with each other than with certain species of *Epamera*.

Those that are interested in the said „genera“, I here provide with a review of them.

I. Forewing in the ♂ with 12 veins of which vein 7 terminates into the margin.

α. The small tail at vein 1 b of hindwing very long and broad.

*Tanuetheira*.

β. The small tail at vein 1 b of hindwing fine and not so long.

*Argiolaus*.

II. Forewing in the ♂ only with 11 veins; vein 8 is absent and vein 7 terminates into the costal margin or apex.

α. Hindwing in the ♂ above with a large mealy spot. Forewing beneath at the middle of the posterior margin with a hair-pencil turned over in front.

1. Forewing in the ♂ beneath in area 1 b without a mealy spot.

*Epamera*.

2. Forewing in the ♂ beneath in area 1 b with a large mealy spot.

*Iolaus*.

β. Hindwing in the ♂ above without a mealy spot.

1. Forewing in the ♂ beneath covered with long hair at the whole anal margin as far as the anal angle.

*Sukidion*.

2. Forewing in the ♂ beneath at the anal margin without any hair or hair-pencil and mealy spot.

*Aphniolaus*.

The species known up to this day do not all fit into this division, and if we intended to continue DRUCE's basis, we should have to establish two or three more new genera.

In order to enable the definition of the ♀♀ being still unknown in many cases, I divide here the genus *Iolaus* into nine groups. These groups are chiefly only based upon coloristic marks, but they seemed to me to be more natural than those being based upon the sexual characters of the ♂♂ and have the advantage of being common to both sexes. The position of some species which I was unable to examine myself, I can unfortunately not ascertain, since some authors did not mention the colouring of the frons and legs in their descriptions.

As to the habits and evolution of these beautiful insects very little is known. LAMBORN found the larvae of *I. alcibiades* and *iulus* visited by ants of the genus *Cremastogaster*, and A. SCHULTZE told me the following about their habits: „The very quick-winged insects fly round the upper twigs of blooming trees in the hottest hours of the day. In the later part of the afternoon, in the mountainous districts, especially the blue species fly to the barren mountain-tops, where they settle down on low shrubs in order to bask in the sun. The species are preferably met with on the parasitic species of *Loranthus*. I observed here at first the ♀♀ depositing their eggs, later on I also found at this plant the larvae undoubtedly belonging to *Iolaus*, but owing to the want of sufficient hatching devices I was unable to develop the larvae. One larva (a wood-louse-like larva) was provided with rather long fleshy cones and was very much like a bird's excrements owing to its being speckled brown and white. The other species resembled a small *podalirius*-larva, but it was laterally much more compressed; it ate holes into the edges of the pulpy *Loranthus*-leaves which it then filled up with its body so that it was difficult to discover.“

#### Review of the Groups of Species.

1. Frons never uni-coloured white. Palpi at the tips black.

A. Forewing beneath at least as far as the apex of the discal cell uni-coloured without markings.

α. Forewing beneath at the apex of the discal cell unmarked or with a dark transverse streak being much longer than thick.

\*. Frons black with white lateral margins which are sometimes so broad that the black colour only forms a median line.

†. The small tail at vein 1 b of hindwing very broad (2 mm) and long (18 to 20 mm) uni-coloured white. — ♂ forewing with 11 or 12 veins and a black hair-pencil at the anal margin.

First Group.

††. The small tail at vein 1 b of hindwing narrower and shorter, never uni-coloured white.



§. Legs uni-coloured white or only along the outside darkened or blackish.

Second Group.

§§. Tibiae and tarsi white with distinctly prominent black spots or rings. — ♂ forewing with 11 veins and a black hair-pencil at the anal margin.

Third Group.

\*\* Frons at least above orange-red or orange-yellow, or white with orange-red markings; sometimes orange-red with a white median line.

o. Forewing beneath at the end of the discal cell unmarked or only with a fine blackish transverse line.

Fourth Group.

oo. Forewing beneath at the end of the discal cell with a thick transverse streak. — ♂ forewing only with 11 veins.

†. Frons not uni-coloured. Legs not quite black. Palpi not yellowish at the base. Wings beneath with a grey or whitish ground-colour. — ♂ forewing beneath at the anal margin with a mealy spot and black hair-pencil. Hindwing above with a dark mealy spot not or scarcely projecting beyond the apex of the discal cell.

Fifth Group.

††. Frons uni-coloured ochreous-yellow. Legs black, below at the base yellowish. Palpi at the base yellowish. Wings beneath with a yellow ground-colour. — ♂ without any mealy spots and hair-pencil.

Eighth Group.

β. Forewing beneath at the apex of the discal cell with a large, square, blackish spot. — ♂ forewing with 11 veins and a black hair-pencil.

Sixth Group.

B. Forewing beneath near the base with a transverse spot or a transverse band situate before the middle of the cell. — ♂ forewing with 11 veins and a black hair-pencil at the anal margin.

Seventh Group.

II. Frons broad, uni-coloured white. Palpi as far as the tips white, or towards the tips only slightly darkened, grey or brownish. — ♂ forewing with only 11 veins.

Ninth Group.

### First Group of Species.

The two large species of this group approximate those of the following group, but they differ from all the others by the long, broad, white small tails at the anal angle of the hindwings. DRUCE established for them the genus *Tanuetheira* which, however, only deviates from *Argiolaus* by the small tail. As the two species are otherwise very closely allied with many other species in the colour and marking, I rather consider them to be a group of the genus *Iolaus*. Legs white, along the outside black or blackish. In all the specimens of *I. timon* which I examined vein 8 of the forewing is absent and vein 7 terminates into the costal margin near the apex of the wing.

**I. timon** F. (67 d). ♂. Wings above jet-black; forewing at the base as far as vein 3 and at the anal margin as far as beyond the middle of vein 1 of a beautiful light greenish-blue; the blue colour only covers the innermost part of area 2 and then extends slantingly and almost straightly towards the anal margin, where it ends taperingly; lobe of the anal margin rather small, white-haired; hindwing in the areas 1 a and 1 b grey, in 1 c to 3 almost as far as the border, at the anal margin of the discal cell and in the basal part of area 4 light blue like the forewings; mealy spot small, brown, surrounded by a lustrous grey area covering the greatest part of the discal cell. Forewing beneath uni-coloured white without markings. Hindwing beneath as far as beyond the middle unmarked, white; behind the middle with a fine black postdiscal line growing less distinct anteriorly, and with 2 black submarginal dots proximally broadly bordered with red, in 1 b and 2; the red borders of these dots are connected in 1 c by a red transverse streak which often touches the postdiscal line; marginal line distinctly black, fringes white. The ♀ deviates above by the blue colour of the forewing being somewhat more extended, covering the base of area 3, and by the same colour on the hindwing terminating in 1 c to 3 about 6 mm distant from the margin; the black marginal band arising thereby is decorated with white submarginal and marginal spots; beneath both wings show two distinct submarginal lines, the red and black spots of the areas 1 b to 2 are strewn with blue scales. Sierra Leone to Cameroon. *timon*.

**I. prometheus** H. H. Drc. is unknown to me and is said to differ from *timon* only by the ♂ forewing showing above in the middle a large lustrous bronze-brown spot and the mealy spot of the hindwing being larger; the ♀ is said scarcely to differ from that of *timon*. Sierra Leone and Unyoro. *prometheus*.

### Second Group of Species.

These species deviate from the others by the frons being along the middle black, laterally white, and by the white, not black-curved or spotted tibiae being striped dull black at most on the outside.

Most of the species are large and the ♂♂ are nearly always above black and blue; only in two species the ♂ forewing above shows a white ground-colour. Both wings beneath without a transverse streak at the end of the discal cell.

Most of the species are known only in the male. I am therefore forced to base the following review exclusively on the ♂♂. The colouring of the legs of *I. inores* is unknown to me; it is therefore not quite certain that it belongs to this group.

#### Review of the ♂♂.

##### I. Forewing with 12 veins; vein 7 into the margin. — *Argiolaus* Drc.

###### A. Hair-pencil of forewing beneath black.

α. Forewing beneath uni-coloured white or whitish, without markings, or with a fine submarginal line at most, at the margin not darkened or only slightly hued reddish, without a dark anal-marginal spot.

\*. Anal lobe of hindwing above more or less scaled red.

†. Hindwing above in the areas 7 and 8 white or whitish-grey. The blue colour of the forewing in area 1 b and at vein 1 at least 3 mm distant from the margin. *I. alcibiades*.

††. Hindwing above at the costal margin black or blackish-grey. Hindwing beneath in area 2 usually with a uni-coloured red, sometimes black-pupilled submarginal spot.

o. The blue colour of the forewing almost reaches the margin in area 1 b and at vein 1 or it is only 1 mm distant from it.

§. Forewing above at the base of the costal margin black with or without blue scales.

1. The blue colour above light sky-blue without a greenish reflection.

*I. menas*.

2. The blue colour above darker, in a certain light with an intense greenish reflection.

*I. iulus*.

§§. Forewing above at the base of the costal margin whitish.

*I. jamesoni*.

oo. The blue or green colour of the forewing is about 3 mm distant from the margin in area 1 b or at vein 1.

§. Wings above with a blue ground-colour.

1. Hindwing above with a broad black marginal band being about 3 mm broad in the areas 1 c and 2, and beneath between the anal lobe and vein 3 with a very thick, black marginal line. Anal lobe above almost entirely black, only with few red scales.

*I. schultzei*.

2. The blue colour of the hindwing in all the areas reaches the black marginal line being about 1 mm thick, and in the areas 1 c and 2 it encloses black submarginal spots. Marginal line beneath very fine. Anal lobe above red with a black dot at the proximal margin.

*I. paneperata*.

§§. Wings above with a lustrous metallic green ground-colour.

*I. calisto*.

\*\*. Anal lobe of hindwing above black with light green scales but without red. The blue colour of the forewing almost reaches the margin in the areas 1 a and 1 b.

*I. catori*.

β. Forewing beneath with a broad, blackish-grey marginal band growing narrower towards the anal angle, and at the proximal margin in 1 a and 1 b broadly blackish. Hindwing above at the costal margin as far as vein 6 black. The blue colour of the forewing in the areas 1 a and 1 b at least 3 mm distant from the margin.

*I. laonides*.

*I. maesa*.

##### B. Hair-pencil of forewing beneath light yellow or brownish-yellow. Forewing beneath white, generally without any markings.

###### α. Wings above blue and black.

\*. Hindwing above at the costal margin light blue and behind its middle with long, white, or light yellowish hairs turned backward; its apex very broad and obtusely rounded off; anal lobe of hindwing small, above black and white without red scales; small tail at the end of vein 1 b very long, about 15 mm, and at the apex distinctly spatulately expanded.

*I. caesareus*.

\*\*. Hindwing above without long light hairs at the costal margin; anal lobe of hindwing above scaled red; small tail at the end of vein 1 b moderately long, at the apex not expanded.

†. The blue colour of the hindwing reaches the margin (the marginal line) and in the areas 1 e to 4 it encloses large, separate, black submarginal spots. Wings beneath without transverse lines.

*I. lukabas*.



††. The blue colour of the hindwing is separated from the margin by a narrow or broad black marginal band and does not enclose any black submarginal spots. At least the hindwing beneath with a black transverse line in 1 b to 2.

o. Hindwing above without any red submarginal spots in 1 c and 2.

1. The black marginal band of the hindwing above as far as vein 1 b broad, at the apex about 3 mm, in area 1 c still nearly 2 mm broad. The blue colour of the forewing in 1 a and 1 b about 5 mm distant from the margin. *I. julius*.

2. The black marginal band of the hindwing above much narrower, especially posteriorly. The blue colour of the forewing in 1 a and 1 b only 2 to 3 mm distant from the margin. *I. silas* v. *lalos*.

oo. Hindwing above in area 1 c and usually also in area 2 with a red submarginal spot. *I. silas*.

β. Wings above white, at the costal margin, apex and distal margin of the forewing and at the margin of the hindwing more or less broadly black or blackish-grey. *I. ismenias*.  
*I. piaggiae*.

II. Forewing with 11 veins; vein 7 into the apex or costal margin.

α. Forewing beneath at the posterior margin with a sharply defined, black hair-pencil. Hindwing at vein 3 with a rather long, hair-like, small tail. — *Epamera* H. H. Drc. — Wings beneath with a white ground-colour.

\*. Forewing beneath with a dark marginal band. *I. laon*.

\*\*. Forewing beneath at the margin not or hardly darkened, uni-coloured white or only with a fine dark submarginal line; at the anal angle in 1 a and 1 b blackish, the dark colour, however, more or less completely covered with white scales. *I. adamsi*.

β. Forewing beneath at the whole posterior margin from the base to the distal margin covered with long black hair. Hindwing without the small tail at vein 3. — *Sukidion* H. H. Drc. — Wings beneath with a brown ground-colour. *I. inores*.

**I. alcibiades** Ky. (67 d, f). ♂. Wings above greenish-blue; costal margin, apex and distal margin of forewing broadly black; the blue colour covers the discal cell, the base of the areas 2 and 3, and the areas 1 a and 1 b as far as about 4 mm distant from the margin. Hindwing at the costal margin in 7 and 8 whitish-grey; marginal line, ends of veins and submarginal transverse streaks in 1 c and 2 black; the mealy spot whitish with a broad dark grey zone; wings beneath white, forewing with a red submarginal line; hindwing with red submarginal spots in 1 b and 2, a postdiscal line formed of black bows, and a red submarginal line from vein 3 to the costal margin; the anal spot with a black dot. The ♀ differs by its lighter and somewhat less extensive blue colour and by large, red submarginal spots of the areas 1 c and 2 of the hindwing above. — The larva, according to LAMBORN, is infested with the ant *Cremastogaster Buchneri*; it lives on an *Aroidea*, *Culcasia scandens* Beauv. *alcibiades*.

**I. menas** Ham. Drc. (67 d). ♂. Upper surface with a light sky-blue ground-colour; the blue colour of the forewing is distally rounded in the shape of a bow, almost reaching the margin at vein 1 and covering more than half the area 2 and about the first third of area 3. The hindwing shows a black marginal line, at the costal margin it is blackish only in the areas 7 and 8 and at the base of area 6, and it has a rounded, jet-black mealy spot only distally narrowly encircled by grey; anal lobe red with some silvery green scales; margin at 1 b and 2 tailed, at 3 only slightly angled; forewing beneath white without markings; hindwing with a fine black postdiscal and marginal line, a uni-coloured red submarginal spot in 2, which sometimes dispatches a fine submarginal line, and with a red, black-spotted anal spot. The ♀ (67 g?) \*) deviates by the blue colour above being replaced by a milky-white colour faintly hued blue at the base of the forewing; hindwing also above with a postdiscal and submarginal line formed of dark streaks or dots of the areas 1 c to 6; the submarginal spot in 2 is larger, rounded and reddish. Senegambia to Gabun. *menas*.

**I. iulus** Hew. (= *mathilda* Suff.) (67 d, e) is somewhat larger than *menas* with a green reflection on the blue colour; the latter is on the forewing of the ♂ distally more irregularly though almost rectilinearly defined. The ♀ is rather different from that of *I. menas*; the light basal area of the forewing is violettish grey, distally whitish; the hindwings are brownish, at the apex of the cell and in the basal part of the areas 2 to 4 greyish-violet, then with a white postdiscal band and a white submarginal line in 1 c to 4 (to 6) and between them with thick, dark transverse streaks which are red and black in 1 c, jet-black in 2. — The larva, according to LAMBORN's statement, is of a wonderful ruby and green colour, it lives on a creeper and is visited by ants of the genus *Cremastogaster*; it has a distinct dorsal gland. Sierra Leone to the Niger. *iulus*.

**I. jamesoni** Ham. Drc. is unknown to me, but it is apparently closely allied with *iulus* and only distinguished by the costal margin of the forewing above being whitish at the base; the description at least does not

\*) This figure and some others marked with ? were made according to specimens in the Berlin Museum, and the author was unfortunately not able to ascertain them without examining the specimens.



state any other differences; it runs thus: „Allied with *iulus*; upper surface lighter and less lustrous blue; forewing distinctly whitish at the base of the costal margin; hindwing with purely white fringes; a dark red spot, posteriorly accompanied by a black dot, occupies the upper part of the anal lobe; the lower part is white with a fine, black marginal line; the small tails are white with a fine black median line. Under surface yellowish-white; in the forewing the costal margin and apex are somewhat covered with reddish-yellow; hindwing with a distinctly prominent orange band being somewhat thickened at each vein and running from the apex to the anal angle, where it unites with the red anal spot; it is also united with the red, black-pupilled submarginal spot of the area 2; a fine, interrupted submarginal line from the apex to the proximal margin; anal lobe with a jet-black, blue-scaled spot; the red anal spot with some violettish-red, small scales; a fine, black marginal line; fringes white; head white; thorax grey; palpi below white, above and at the apex black; legs white; antennae black, below with white dots.“ Kongo District on the Aruwimi River.

*schultzei*.

**I. schultzei** *Auriv.* (67 e) is very easily recognizable by the thickened black marginal line of the hindwing beneath and by the other marks mentioned in the review. ♀ unknown. Adamaua in the Atlantica Mountains.

*paneperata*.

**I. paneperata** *H. Drc.* (= *elisa Suff.*) (67 e). The ♂ approaches above the ♂ of *menas*, but it is at once discernible by the black marginal band of the forewing being much broader in the areas 1 a and 1 b, the thicker black marginal line in the hindwing, the black submarginal spots of the areas 1 c and 2 of the hindwing, and the much larger red anal lobe of the hindwing. Beneath different only by the larger red anal spot of the hindwing. Margin of hindwing at vein 3 with a short, though distinct tail. Nigeria near Lagos to Kongo.

*calisto*.

**I. calisto** *Dbl. & Hew.* (67 e). The ♂ deviates from the allied species by the light parts of the upper surface being metallic green, not blue. The under surface is white with an indistinct, brownish postdiscal line; forewing at the costal and distal margins hued reddish; hindwing with a large, carmine spot in 2, being distally coloured black; at the anal angle a black spot scaled light blue and proximally bordered by red; a shortened black submarginal line; marginal line black; fringes white. The ♀ is somewhat larger than the ♂ with the light parts of the upper surface greyish-white; hindwing with a somewhat irregular, brown, postmedian transverse band from the apex to the proximal margin, then follows a more indistinct submarginal band and a broad dark brown submarginal band; anal lobe orange-red with a black dot; an orange-red spot in 2; both wings at the bases feebly covered with bluish-grey scales; fringes of forewings brown, of hindwings white; the under surface as in the ♂. Senegambia to Gabun.

*catori*.

**I. catori** *B.-Bak.* is described as follows: ♂ forewing of a deep lustrous blue, at the base and in the discal cell feebly speckled with light blue scales; costal margin broad black; apex as far as the anterior angle of the discal cell black; margin broad black, posteriorly narrowed and behind vein 2 linear; a pencil of black hair beneath at the proximal margin. Hindwing of a bright lustrous blue with a large, darker spot in the middle, reaching the proximal margin of the discal cell and enclosing a purple mealy spot of a greenish reflection, which extends to the costal margin and is surrounded by a ring of bronze-green scales; the whole spot changes its colour in a different light; behind it in the discal cell a lustrous purple stripe. Both wings beneath of a pure white; forewing unmarked; hindwing with a very fine dark submarginal line which is more distinct at the anal angle and with a red spot in 2; the small anal lobe which is above black with light green scales, is beneath lustrous blue, green and violettish-red at the proximal margin and above bordered by a red moon-spot from which a fine dark line extends to the proximal margin; three small, white-edged tails of which that at vein 3 forms a long tooth. Expanse of wings: 37—38 mm. Sierra Leone.

*laonides*.

**I. laonides** *Aur.* (67 e) differs from all the preceding by the sharply defined, dark marginal band on the forewing beneath. The ♂ is besides distinguished by the blackish colouring of the areas 1 a and 1 b on the forewing beneath. ♂. The dark blue colour of the forewing with a greenish reflection is distally rounded off, it covers the discal cell, the base of the areas 2 and 3 and terminates at least 3 mm. distant from the margin in the areas 1 a and 1 b. On the hindwing the blue-colour covers the areas 1 c to 5 and the posterior margin of the discal cell and is bordered by a black marginal line being anteriorly very much widened in area 5; mealy spot yellowish-brown with a black zone; anal lobe black with green and white, sometimes also with red scales; often a black submarginal spot in area 2. Hindwing beneath white with a blackish postdiscal line between the proximal margin and vein 4 and an irregular, anteriorly reddish-brown, posteriorly red submarginal line united with the black-pupilled spots of the areas 2 and 1 b; the small tail at vein 3 dentiform. The ♀ is beneath like the ♂, but above it shows a broad, black marginal band on both wings, large black submarginal spots in the areas 1 b to 2 on the hindwing, and a black postdiscal transverse streak in the areas 1 c and 2 of the hindwing. Sierra Leone.

*maesa*.

**I. maesa** *Hew.* (67 e, f). Of this species only the ♀ is known. Its position is therefore uncertain. Frons white with a fine black median line. The species is larger than *laonides*, but it seems otherwise chiefly to differ



only by the forewing beneath exhibiting within the marginal band another dark transverse band tapering posteriorly and terminating in area 1 b. Sierra Leone.

**I. parasılanus** *Rbl.* is unknown to me. The blue colour above is a little darker than in *I. iulus* *Hew.*; *parasılanus.* the black distal part has almost the same extent, but it is at the proximal angle a little broader than in *iulus*. The costal margin and fringes of the forewing are here likewise black. The hindwing shows a broad black margin being 3 mm broad at the costal angle and slowly narrowing towards the anal angle. Anal lobe cerise. The sexual mark consists of a circular, dark grey costal-marginal spot inside filled up with black, not quite reaching to the proximal margin of the discal cell. The small tail on vein Cu2 (= vein 2) is 5 mm long and at the base and apex white. (The small tail on the anal vein is absent.) The fringes are white in their terminal half. Under surface silvery white, forewing with a fine, brownish transverse streak at the end of the discal cell, a fine brownish transverse stripe at two thirds, and another, orange, parallel one between the latter and the margin. On the hindwing the proximal transverse stripe extending at two thirds is almost straight and brownish, above the anal angle it is sharply broken, and in its part returning towards the proximal margin black. The distal transverse stripe is here orange, two, as in the forewing. In the anal lobe there is a red, round macula proximally bordered by violet, distally by black, and in cell 2 a much smaller red dot. Tarsi with distinct black rings (*REBEL* i. litt.). It therefore probably belongs to the third group. Length of forewings: 20 mm. Captured in the primeval forest on the north western shore of the Lake Tanganyika.

**I. caesareus** *Auriv.* (67 f) is one of the most beautiful and most peculiar species of *Iolaus*. ♂. *caesareus.* We may add to what has already been said above, that the blue basal area of the forewing is distally, between the apex of the cell and vein 1, almost quite straightly cut off and almost reaches the margin in 1 a and 1 b. The mealy spot of the hindwing is very small, but surrounded by a very broad zone; the blue colour of the hindwing passes over into a light blue towards the costal margin, and everywhere it almost completely reaches the margin, the black marginal line is extremely fine, being distinct almost only at the ends of the veins; areas 1 a and 1 b black; anal lobe small, black and white without any red. Both wings beneath white; forewing without markings; hindwing with a small, black, proximally red dot in 2 and a small black anal spot bordered with red and scaled blue; postdiscal line scarcely visible; submarginal line absent. The ♀ is unknown to me. Cameroon.

**I. lukabas** *Ham. Drc.* (67 f). ♂. The blue basal area of the forewing is distally rounded off, covering *lukabas.* about half of the areas 2 and 3, and in the areas 1 a and 1 b at least 3 mm distant from the margin. Hindwing above in 1 a and 1 b grey, otherwise as far as vein 7 and as far as the fine black marginal line of a bright sky-blue with a red anal spot and large, black submarginal spots in 1 c to 4. Wings beneath white; forewing without any markings; hindwing only on the anal lobe with a black spot proximally bordered with red, and a red dot in area 2. ♀ unknown. Senegambia.

**I. julius** *Stgr.* (68 e). The ♂ resembles that of *lukabas*, but it differs by the greenish-blue colour above *julius.* being much less extensive; on the forewing it only covers a part of the discal cell and not or but little the base of the areas 2 and 3; on the hindwing it is separated from the margin by a proximally irregularly lobate, black marginal band of 2 to 4 mm width. Mealy spot olive-brown surrounded by a lustrous black. *STAUDINGER* describes the ♀ as follows: „*I. julius* ♀ is above still more intensely blue than *julianus* (= *alcibiades*) — ♀, without the intense greenish hue of the latter species: the black marginal parts of the forewings contrast still more with the blue; on the hindwing the costal margin is light only in the uppermost part (as far as it is covered by the forewing), otherwise black, particularly between the subcostals 1 and 2, where it is greyish-white in the larger proximal part in *julianus*, and in *julus* mostly somewhat light-coloured, though never so intensely black. Above the brownish-red anal eye-spot differing from the two other species there is an orange spot distinctly encircled by black, above which there are two more black marginal spots, the lower of which shows some orange scales in the centre; these three distal-marginal spots are contiguous at the veins; in front of them there are three oblong, distinct, black spots in the blue ground-colour, which differ entirely from the four blackish streaks in *julianus* (*alcibiades*)-♀ or even *julus*-♀, where they flow together like a band.“

**I. aelianus** *Stgr.* Of this species, unknown to me, only the ♀ has been described. *STAUDINGER*, in *aelianus.* 1891, writes about it as follows: „Size 40 mm; the upper surface shows a blue colour similar to that in *julius*-♀, perhaps a little lighter, though by no means so greyish, as in *julianus*; the black marginal parts of the forewing are somewhat broader than those in *julius*, and contrast just as strongly with the blue; on the hindwing the costal-marginal part between the subcostals 1 and 2 (= veins 6 and 7) is just as black as in *julius*-♀; the brownish-red anal spot, however, is different, with a black spot downwards as in *julianus* and *julus*; different from those of the other three species are the three black marginal spots above it, since in the lowest being faded in both *aelianus*-♀♀ there are no traces noticeable of orange or reddish scales; the two upper ones are distinct and are separated from each other by the median vein 2 (= vein 3) and some blue colouring; in front of them there is in the Sierra Leone-♀ a distinct, dentate, black transverse line marking growing indistinct downwards and being neither so broad and distinct in another ♀; this black line is



more remote from the spots and runs much more obliquely than is the case in the corresponding ♀♀ of *julianus* and *julus*. On all the wings beneath there is a broad, orange transverse line widening on the hindwing towards the costal margin, which is not the case in *julianus* and *julus*; besides here the lower orange-red spot into which it terminates (in one specimen provided with a large black pupil) is entirely connected with the brownish-red anal spot by a narrow, faded, orange line, which is not the case in either of the 3 other species; on the forewing the apical part of the costal margin is rather broad and distinctly blackish-grey down to the median vein 2, whereas in the ♀♀ of the other 3 species it is here only very faintly darkened; into this distinctly darkened upper costal margin vanishes the very broad orange transverse line which is situated close at the distal margin as in *julus* and extends parallel to it. Particularly this distinctly dark apical part of the distal margin on the forewing beneath, as well as the different markings in the lower distal-marginal part on the hindwing above separate these *I. aelianus*-♀♀ from those of the three other species; they are the most closely allied to *julus*-♀, but I do not believe that they might be a dimorphous form of it. *aelianus* cannot be the ♀ of *calisto* Dbl. & Hew. being rather similar to *julus* on the under surface, since *calisto* exhibits beneath neither traces of the orange transverse lines nor any of the distinctly dark apical part of the distal margin."

*silarus*.

**I. silarus** Ham. Drc. is described as follows: ♂ above on the forewing of a lustrous violettish-blue, the apex, costal and distal margins being black; hindwing with two small tails of a lustrous blue, the costal margin broadly and the distal margin narrowly black; anal lobe carmine with violet scales and a black margin; a black spot between the veins 1 c and 2 encloses an indistinct red dot; another smaller red spot is situated between the veins 2 and 3 and also encloses an indistinct red dot. Under surface lustrous white; hindwing with a distinct, straight, red submarginal line extending from the apex of the wing to a red spot in area 2; anal lobe violettish-red with a black spot; within the anal lobe a black, interrupted line as far as vein 3. — ♀: above on the forewing violettish-blue, whitish at the base of the veins 2 and 3; the apex, costal and distal margins blackish-grey; hindwing violettish-blue, the apex, costal and distal margins blackish-grey, with a postmedian, irregular, black transverse band being bordered with red between the veins 1 c and 3; anal lobe carmine. Antennae black. Palpi above black, below white. Legs white. East Africa: Delagoa Bay. — The species is unknown to me. DRUCE compares it with *iulus* Hew.; but the description does not show by what it differs from *silas* Ww. and its race *lalos*.

*silas*.

**I. silas** Ww. (67 d, g). ♂. Forewing above lustrous blue; at the costal margin, at the apex (very broadly) and distal margin black; the blue colour is costally and distally rounded off and covers the discal cell, the areas 1 a and 1 b as far as 2 to 3 mm from the margin, about the basal half of area 2 and a small part of the areas 3 and 4; beneath the forewings are uni-coloured white without markings, or they show a more or less complete reddish-yellow submarginal line. Hindwing above blue, at the costal margin as far as the middle of area 6 and at the distal margin narrowly black, at the proximal margin as far as vein 1 b whitish-grey or blackish-grey; the black marginal line is narrow (about 1 mm) and only expands to a width of 2 to 3 mm at the apex anal lobe red strewn with some metallic scales, surrounded by white and decorated with short black and longer white scales; in 1 c and generally also in 2 there is an orange submarginal spot more or less surrounded by black; 3 small tails, that at the end of vein 3 short; hindwing beneath white with a fine postdiscal line being black in the areas 1 a to 2 and reddish-yellow in 3 to 7, a separate red submarginal spot in 2, a fine, black marginal line and a black anal lobe proximally broadly bordered with red. The mealy spot on the hindwing above is yellowish-brown and surrounded by a broad, blackish-grey zone covering the greatest part of the discal cell. — The ♀ entirely resembles the ♂ beneath, but above it deviates by the blue colour being less extensive and covered with a grey or whitish tint; the black marginal band of the forewing is about 4 mm broad at vein 2; on the hindwing the blue colour terminates a little behind the middle, whereby a dark marginal band of 5 mm width is formed, enclosing large, generally united, reddish-yellow submarginal spots of the areas 1 c to 5.

*lalos*.

Cape Colony as far as Delagoa Bay. — **lalos** Ham. Drc. (67 g; f?) is the north-eastern, somewhat larger race differing in the ♂ by the absence of the red submarginal spots on the hindwings above, and in the ♀ by both wings above being in the middle broadly white or whitish instead of bluish; the reddish-yellow submarginal spots on the hindwings above are in the ♀ large though generally only developed in the areas 1 c, 2 (and 3).

*lasius*.

German and British East Africa. — ab. -♀ **lasius** Suff. is distinguished by both wings above being as in the ♂ of a lustrous deep blue colour except the veins 2 to 4 of the forewing, which are dusted whitish almost as far as the black margin; on the hindwing the submarginal spots in 1 c and 2 are not yellowish-red but of a brilliant pure red colour. From the northern end of Lake Nyassa.

*crawshayi*.

**I. crawshayi** Btlr. (68 b). Only the ♀ of this species has been described by BUTLER, as follows: „Most closely allied to *trimeni* (the *trimeni* mentioned here is evidently not the genuine *trimeni* but probably a ♀ form of *silas*); the blue colour is more lustrous than in the ♀ of that species and without the white colouring on the forewing above; the median vein and the veins 2 to 4, however, broader black; hindwing at the costal margin and in the areas 6 and 7 whitish with black veins, at the margin about just as broad black as in *lalos* and with two almost united, orange submarginal spots towards the anal angle; fringes grey with white



tips; small tails black, at the apex white and at the ground with white fringes; anal lobe white with two black dots and a hemochrome spot speckled in a light blue, almost touching the basal side of the black dots; proximal margin dark greyish-brown. Under surface chalk-coloured with a faint silky lustre, forewing with apically dark fringes and traces of a hemochrome submarginal line; hindwing with a hemochrome postdiscal line being angular at the veins 6 and 3 and terminating at vein 2, where it coheres with a thin submarginal spot formed of hemochrome and light blue scales; anal lobe black, proximally bordered by two hemochrome bows and one bluish bow; within the anal spot some few black streaks and small dots, a blackish postdiscal line from the proximal margin to vein 2; body beneath white. British East Africa: Kikuyu. — The species very closely corresponds with the ♀ of *silas* and seems only to differ by its bright blue colour above and the colouring of the anal lobe.

**I. ismenias** *Klug* (68 d). Both wings above white, at the base faintly hued light bluish; forewing at the costal margin as far as the discal cell, at the apex (very broadly) and at the distal margin blackish; hindwing with a fine black marginal line, from the apex to vein 3 more or less broadly blackish-grey, in the area 2 with a large red submarginal spot and in area 1 c with a black one; anal lobe small, red, distally sealed black and bluish; in the ♂ a small, light grey, sharply defined mealy spot covering the base of area 6 and the parts close at the discal cell and area 7. Both wings beneath white; forewing uni-coloured without markings, hindwing with a black postdiscal line broken up into streaks, an orange-red submarginal spot in 2 and an anal spot coloured as above. The ♀ is without the bluish colouring at the base on the forewing above and the mealy spot on the hindwing, but otherwise it hardly differs from the ♂. It occurs in the northern part of the Ethiopian region from Lagos to Nubia. *ismenias.*

**I. piaggiae** *Oberth.* is very closely allied with *ismenias* and presumably represents a geographical race or a ♀-form of it. Only the ♀ is known; it differs from that of *ismenias* by the hindwing showing a broad orange submarginal band being also continued on the forewing as far as vein 3; besides both wings above are at the base broadly covered with blue, and the forewing shows a black streak at the end of the discal cell. Abyssinia. *piaggiae.*

The two following, closely allied species deviate from all the species of this group mentioned hitherto by the ♂ forewing having only 11 veins; they thereby belong to the „genus“ *Epamera* H. H. Drc. They are moreover distinguished by the mealy spot of the hindwing above being small and white and immediately bordering on the lustrous blue ground-colour. The blue colour of the forewing above is distally irregularly defined, and in the areas 1 a and 1 b distinctly extended towards the margin. The anal lobe of the hindwing is above at the margin broad white, proximally black and not or but little scaled red. The small tail at vein 3 is about 4 mm long and the margin sometimes also at vein 4 distinctly angled. Hair-pencil on the forewing beneath black. Forewing in the ♂ beneath at the proximal margin in 1 a and 1 b more or less blackish.

**I. laon** *Hew.* (67 g). ♂. Forewing above lustrous blue, at the costal margin, at the apex (very broadly) and at the distal margin black; the blue colour covers the discal cell, the base of the areas 4 to 2 and the greatest part of the areas 1 a and 1 b; in 1 b it distinctly projects towards the margin from which it is only separated by a black marginal band of about 2 mm width. The blue colour of the hindwing covers the areas 1 c to 6 and the discal cell (except the mealy spot and is separated from the margin only by a fine black line which, however, is at the apex expanded to a width of 3 mm; a rounded, black submarginal spot in 1 c sends a black transverse streak into 2; proximal margin blackish-grey, scaled whitish. Wings beneath white; forewing at the margin broadly darkened or with three dark transverse bands being contiguous at the costal margin; hindwing with a broad orange submarginal line in 1 a to 6, a black submarginal spot in 1 b and 2 and a fine, sharply dentate black postdiscal line between the proximal margin and vein 5. The ♀ deviates above by the black marginal bands being much broader, the hindwing showing three large, black submarginal spots (in 1 b, 1 c and 2) and a thick, black, discal transverse streak in 1 c and 2, and beneath by the sharply defined and almost black marginal band of the forewing. Gold Coast to Gabun. *laon.*

**I. adamsi** *Lathy* (68 d) is very much like *laon* (67 g) and differs only by the absence of the dark marginal band on the forewing beneath, and by the reddish-yellow submarginal line on the hindwing beneath being very fine or indistinct in the areas 3 to 6. Nigeria. — **emma** *Suff.* is probably identical with *adamsi*; the figure only deviates by the black submarginal spots on the hindwing above being smaller and the submarginal spot in area 2 beneath larger. The fine, black postdiscal line on the under surface of the hindwing seems to be absent. Togo. *adamsi.*

**I. inores** *Hew.* (67 g, 68 a) is a very peculiar, very rare species reported to originate from Gabun. The ♂ differs from all the other species by the forewing beneath being clad with long black hairs along the whole proximal margin. Both wings above as far as the margin of a bright sky-blue, the apex of the forewing jet-black in a width of 11 and a length of 9 mm; wings beneath brown, forewing at the anal margin broadly light blue; hindwing with a black dot bordered with red in area 2, a black dot at the anal angle and an indistinct, dark postdiscal line; 2 extremely fine, small tails; body above bright blue. *inores.*



## Third Group of Species.

Frons as in the species of the second group black with white lateral margins. Legs also white, but with distinctly prominent black rings or spots. Anal lobe of hindwing above black and white with some metallic scales, but without any red. In all the ♂♂ known the forewing only shows 11 veins. The mealy spot on the hindwing above is surrounded by a large, lustrous dark zone. Hindwing above with a fine, black marginal line sometimes a little widened at the apex of the wing.

Wings beneath white and in all the species with almost quite the same markings; forewing beneath with two widely separated, blackish-grey postmedian lines which are continued on the hindwing as far as vein 3 and are often little distinct; hindwing then between veins 3 and 1 a with a thick, irregular reddish-yellow or red transverse band which is parted by a metallic lustrous greenish or silvery line; in addition a black submarginal dot in area 2 and at the anal angle. As the ♀ is only known of one species, the following review only refers to the ♂♂.

## Review of the ♂♂.

A. The blue colour of the forewing above almost covers the whole discal cell and also the base of the areas 2 and 3.

α. Wings above light blue with a distinct green reflection.

*I. bellina*.

β. Wings above deep blue without a green reflection.

\*. Forewing at the anal margin very much and broadly sinuate. Mealy spot of the hindwing very large.

*I. sappirus*.

\*\*. Forewing at the anal margin with a smaller indentation. Mealy spot of the hindwing smaller.

*I. gemmarius*.

B. The blue colour of the forewing above is very much reduced, covering the basal half of the discal cell at most and leaving the areas 2 and 3 entirely (or almost entirely) free.

α. Forewing beneath as far as the proximal transverse line darkened (the distal line indistinct). The distal transverse line on the hindwing beneath towards the apex of the wing thickened and reddish-yellow. Hindwing above without a black apical spot.

*I. sapphirinus*.

β. Hindwing above with a black apical spot. The distal postdiscal line on the hindwing beneath at the costal margin neither red nor expanded.

*I. sciaphilus*.

*bellina*.

**I. bellina** Plötz (= *iaspis* D.c.) (68 d). We have only to add to what has been said above that the hindwing above generally shows two black spots in area 1 c; these spots are much larger in the ♀ and separated by a white spot. The ♀ differs besides from the ♂ by the blue colour being less extensive and of a greyish tint; costal margin of hindwing as far as vein 5 black. Sierra Leone to Cameroon.

*sappirus*.

**I. sappirus** H. Drc. (68 d) only deviates from *bellina*, as the figure shows, by the marks stated above. Sierra Leone.

*gemmarius*.

**I. gemmarius** H. Drc. (68 d) is probably only a race of the preceding species. Cameroon.

*sapphirinus*.

**I. sapphirinus** Auriv. (= *aurivillii* Rüb.) (68 e) is easily recognizable by the shape of the blue area of the forewing. Gabun on the Ogowe River.

*sciaphilus*.

**I. sciaphilus** Schultze (68 e). I have not seen. The description says: ♂ on the forewing above jet-black with a large, bright, light greenish-blue basal spot (of the same extent as in *sapphirinus*); hindwing above with a bright light greenish-blue ground-colour, areas 1 a and 1 b black, from the proximal margin to vein 5 a fine black marginal line, then a large, jet-black costal-marginal spot; scent-spot very large, filling up the whole cell except a small, blue basal spot; in area 1 c a black spot cohering with the proximal margin and towards the base from it a sagittiform spot on vein 2, likewise connected with the proximal margin by a broad black streak; anal lobe black, posteriorly white, mostly with some metallic green scales; scent-spot lustrous grey, in the centre with very much upturned, golden brown scales. Beneath as in *I. bellina*, except the metallic median line of the hemochrome spot being continued on the anterior side of the orange colour towards the anal lobe. The ♀ differs from the ♂ by the discal cell of the hindwing above being scaled blue and the hindwing showing a small, short tail at vein 3. 24 to 28 mm. Cameroon in the district of the Upper Cross River.

## Fourth Group of Species.

To this group I place all the species in which the frons is above more or less yellow or reddish-yellow and the forewing beneath marked as in the three first groups. Most of the ♀♀ being unknown, I must here likewise contrict myself to the ♂♂ in the review of the species.



## Review of the ♂♂.

- I. Forewing with 12 veins. Hair-pencil of forewing beneath slaty-grey. Legs white without black spots.  
*I. trimeni.*
- II. Forewing with only 11 veins.
- A. Forewing beneath at the anal margin with a large hair-pencil.
- \*. Hair-pencil yellow. *I. scintillans.*
- \*\*. Hair-pencil white. *I. mermis.*
- \*\*\*. Hair-pencil black or blackish.
- §. Wings beneath with an irregular, thick, brownish-red submarginal band being expanded to an apical spot at the apices of the wings. Anal lobe of hindwing above uni-coloured blue without red scales. *I. creta.*
- §§. Forewing beneath behind the middle with but one or two blackish or red transverse lines.
- †. Hindwing above in the areas 1 c and 2 without black submarginal dots.
- β. The light blue colour of the forewing above covers two thirds of the wing and reaches the costal margin; the black apex is scarcely more than 5 mm broad. Hindwing above blue as far as the costal margin. *I. carina.*
- ββ. The blue colour of the forewing above rarely covers more than the basal half and does not reach the costal margin. Hindwing above at least at the apex of the costal margin black.
- +. The blue colour of the forewing above entirely or almost entirely covers the discal cell, reaches vein 4 and is distally more or less rounded off.
- o. Forewing above in the middle with a white spot. *I. albomaculatus.*
- oo. Forewing above without a white spot.
1. The blue colour of the forewing above does not cover half the area 3.
- a. Anal lobe of hindwing white with a black spot scaled green and without red scales or only with few such scales being almost covered by the hairing.
- a'. The lustrous grey surroundings of the mealy spot on the hindwing above are very extensive, covering the basal part of the areas 4 to 6 and being at vein 5 only about 3 mm distant from the margin. Wings above light blue. *I. iasis.*
- b'. The lustrous grey surroundings of the mealy spot on the hindwing above are less extensive, extending hardly beyond the apex of the discal cell and being at vein 5 at least 5 mm distant from the margin. Wings above darker blue. *I. sibella.*
- b. Anal lobe of hindwing above broadly red with a black spot; the grey surroundings of its mealy spot of a moderate size and at vein 5 about 6 mm distant from the margin. *I. cytaeis.*
2. The blue colour of the forewing above covers the greatest part of the areas 2 and 3 and is at vein 3 only 2 mm distant from the margin. *I. cottoni.*
- +++. The blue colour of the forewing above only covers the basal half of the discal cell and only reaches vein 2 or covers the innermost base of area 2 at most.
- o. The lustrous whitish-grey surroundings of the mealy spot on the hindwing above are very extensive, reaching the black marginal band in the areas 5 and 6 and being there only 2 mm distant from the margin. Anal lobe of hindwing above proximally scaled red; wings above light blue. *I. hemicyanus.*
- oo. The blackish surroundings of the mealy spot on the hindwing above scarcely extends beyond the discal cell and is at vein 5 about 6 mm distant from the margin. Wings above deep blue.
1. The first small tail (at vein 1 b) on the hindwing broad, about 9 mm long and above white. *I. neavei.*
2. The first small tail of the hindwing shorter, above black with white fringes and only at the apex all white. *I. agnes.*

††. Hindwing above in 1 c and 2 or at least in 1 c with a black or red submarginal dot. The blue colour of the forewing above covers the discal cell and reaches at least vein 4.

o. The postdiscal and submarginal lines beneath at least as far as vein 3 of the hindwing fine and blackish-grey. Forewing beneath at the end of the discal cell generally with a fine, dark transverse line. Hindwing with three small tails.

1. Costal margin of hindwing above black almost as far as vein 6. *I. belli*.

2. Hindwing above at the costal margin as far as vein 7 whitish, then blue; vein 7 and a small apical spot in area 6, however, blackish. *I. silanus*.

oo. Forewing beneath between the costal margin and vein 2 with a thick, red postdiscal line but without a submarginal line; marginal line thick, orange. Hindwing beneath with thick, red postdiscal lines and submarginal lines from the costal margin to vein 2. Hindwing above outside the mealy spot as far as the costal margin or as far as vein 7 blue. *I. sidus*.

B. Forewing beneath at the anal margin without a hair-pencil. The blue basal area of the forewing small, not occupying half the wing. Mealy spot of the hindwing very large, lustrous white. Hindwing in the ♂ with only 2 small tails.

*I. aethria*.

*I. barbara*.

*I. mildbraedi*.

*I. mirabilis*.

*trimeni*.

**I. trimeni** Wallengr. ♂. Forewing above blue; costal margin (narrowly), apex (very broadly) and distal margin black; the blue colour distally defined in the shape of a bow and not quite uniform; costal margin at the base narrowly reddish; hindwing above blue, at the base and costal margin black and with a moderately large dark mealy spot covering the greatest part of the discal cell; distal margin narrowly, proximal margin broadly black; two black submarginal spots near the anal angle. Wings beneath silvery white; forewing unmarked; hindwing, however, with a fine black postdiscal line and a still finer reddish-yellow submarginal line terminating into a rounded, red submarginal spot of area 2; anal lobe red, distally black with bluish scales; a fine black marginal line; the small tail at vein 1 b white with a black median line, that at vein 2 black with a white apex. Fringes white, those of the forewings above grey. The ♀, according to TRIMEN, resembles the ♂ beneath, but above it differs by the blue colour of the forewing being distally more or less whitish and by the blue colour of the hindwing terminating about 4 mm before the margin; the broad marginal band formed thereby is whitish as far as vein 6, then black, and encloses two rows of 5 or 6 black spots each; in the submarginal row the spots of the areas 1 c and 2 are larger and pupilled red; the spots of the postdiscal row are strigiform and situate at the distal margin of the blue colour. A rare species hitherto only met with in the Transvaal. — HAM. DRUCE says (Proc. Zool. Soc. Lond. 1902, 2 p. 118) that *trimeni* belongs to *Epamera*. The genuine *I. trimeni*, however, is according to DRUCE's system an *Argiolaus*. It is therefore evident that DRUCE had not the genuine *I. trimeni* before him. The same is probably the case with the species mentioned by BUTLER as *trimeni* from the Mashunaland.

*scintillans*.

**I. scintillans** Auriv. (= *gazei* Ham. Druce) (68 e). Head above, particularly on the antennae orange-red, frons white with an orange median line. Wings beneath white; forewing unmarked or with indistinct transverse lines, at the margin sometimes faintly hued yellowish; in the ♂ at the base of the areas 1 a and 1 b a large, lustrous, anteriorly rounded, grey spot; hindwing with a fine, separate, black postdiscal line between the costal margin and vein 1 a; the submarginal line of it is absent or only represented by some red streaks of the areas 4 to 6 and a line in 1 b; a separate, black spot in 2 close at the margin, anal lobe with a large red, and a smaller black spot; the former decorated with violet, the latter with greenish scales. In the ♂ the basal part of the forewing above is lustrous blue as far as the costal margin; the blue colour reaches the apex of the discal cell and vein 4, it is distally rounded off and (almost) reaches the margin at vein 1; in the ♀ the blue area is smaller and lighter and distally broadly white. The hindwing in the ♂ above between the veins 1 b and 6 beautifully blue with a fine black marginal line being a little expanded at the apex, a black submarginal spot in 1 c and a brown mealy spot with a rounded, blackish-grey surrounding; anal lobe red, black and white; areas 1 a and 1 b for the greatest part whitish. In the ♀ the hindwing is above white, at the base somewhat covered with blue, and with two blackish postmedian transverse bands parallel to the distal margin. Nigeria to the Sudan.

*mermis*.

**I. mermis** Hem. Drc. (68 e). ♂. Forewing above jet-black with a small light blue basal area; the blue colour scarcely covers more than the basal half of the discal cell, a minute part of area 2, and reaches the proximal margin 3 mm distant from the margin. Hindwing above from the costal margin to vein 1 b and to the fine black marginal line light blue with a large, rounded mealy spot, but without other spots; areas 1 a and 1 b grey, anal lobe white with a small red and black spot. Wings beneath white with blackish-grey postdiscal and submarginal lines; these are on the hindwing thickened from vein 3 to vein 1 a, red and both with the submarginal



spot in 2 and with the anal spot they are united; forewing with a fine grey transverse streak at the end of the discal cell. The ♀ deviates above from the ♂ by the blue colour of the forewing distally passing over into white, the costal margin of the hindwing being broad black and the areas 1 c to 4 showing black submarginal spots. German and British East Africa. — By the white hair-pencil of the forewing beneath this species differs from all the others.

**I. creta** Hew. (68 f). ♂. Both wings above sky-blue; apical half of forewing black, the black colour at the base of the veins 3 and 4 extended towards the base, at the anal margin 3 mm broad; hindwing in 1 a and 1 b dark brown, only at the apex narrow black; no submarginal spots; anal lobe white and black almost without any red; the mealy spot is of a moderate size, round, brown with a broad, lustrous grey zone. The under surface is white and distinguished by the brown postdiscal and submarginal lines being of an irregular thickness and at least united at the costal margin; the anal spot and the submarginal spot in area 2 black proximally bordered with red. ♀ above lighter blue with a black costal-marginal band of the hindwing (as far as vein 6); hindwing in the areas 1 b to 3 at the margin white with a black marginal line and black submarginal transverse streaks and besides with a round black spot in area 2. Congo District.

**I. carina** Hew. (68 f). This delicate species is particularly distinguished by the great extent of the light, in the ♂ blue, in the ♀ almost white colour of the upper surface; on the forewing the light colour reaches to the costal margin, extending far beyond the apex of the discal cell and being distally very much rounded off; the black apex is therefore only 5 mm broad and gradually narrows towards the anal margin. The hindwing in the ♂ shows a small mealy spot, a fine black marginal line and a grey proximal margin; in the ♀ only a black submarginal line broken up into spots; the rest is blue in the ♂ and whitish in the ♀. Beneath with two widely separated, fine, reddish transverse lines, the proximal line extending across the middle, the distal line corresponding to the postdiscal line of the other species; the submarginal line is absent; a small, black submarginal dot at the anal angle and in area 2; both towards the base bordered with orange. „West Africa“.

**I. iasis** Hew. (= *bertha* Suff.) (68 f.). Wings beneath white with fine blackish-grey postdiscal and submarginal lines; forewing at the margin feebly darkened; the submarginal line of the hindwing is in area 2 united with the red bordering of the submarginal spot and is then thickened as far as vein 1 a and orange; anal lobe white with a black, proximally red spot as usually strewn with some metallic scales. The upper surface of the ♂ has already been described in the review (p. 399). The ♀ differs above by the blue basal area of the forewing being smaller and distally, particularly in 1 b, 2 and 3 whitish; hindwing at the costal margin as far as the discal cell and vein 5 black, in the discal cell and the basal part of the areas 1 c to 3 light bluish, then in 1 c to 4 violettish-grey or whitish with black postdiscal transverse streaks in 1 c and 2 and with a black submarginal spot in 1 c; anal lobe as in the ♂; proximal margin grey; fringes white. Senegambia to Kuilu.

**I. albomaculatus** Em. Sharpe is unknown to me. The short description says: allied with *I. iasis* (68 f), but easily discernible by the white spot of the forewing. ♂. Forewing: costal margin and apex black, towards the anal angle much narrower; the middle deep blue, brightened by a white spot in the upper part of the middle; hindwing similar to that of *I. iasis*, the blue colour somewhat more purple; the under surface does not deviate from that of *I. iasis*. Toro.

**I. sibella** Ham. Drce. (68 g) differs above from *iasis* only by the marks mentioned in the review. Beneath white and similar to *iasis*, except both the transverse lines of the forewing and the submarginal line of the hindwing being absent or indistinct. Cameroon. Fernando Po.

**I. cytaeis** Hew. (68 g). ♂. Wings above deep blue; forewing at the costal margin as far as the discal cell, at the apex very broad (about 8 mm) and at the distal margin as far as the anal margin (about 3 mm broad) black, the blue colour distally rounded off; the black marginal line of the hindwing at the apex expanded into a band of 2 to 3 mm width. Beneath white, only differing from *iasis* by the submarginal line and the red submarginal spots of the hindwing between vein 3 and the proximal margin being united into a broad orange-red band. ♀ unknown. Fernando Po.

**I. cottoni** B.-Bak. (68 g). The ♂ of this species differs from all the allied species by the dark greenish-blue colour on the forewing above covering the greatest part of the areas 2 and 3, whereby a black marginal band of only 2 (to 3) mm width remains between the vein 4 and the anal margin; in the areas 4 to 6, however, the black colour reaches to the apex of the discal cell. Hindwing at the costal margin as far as vein 6 and at the proximal margin in 1 a and 1 b black; a very fine black marginal line; fringes white; mealy spot lustrous black, covering the discal cell. Wings beneath white, at the apex and distal margin of the forewing as far as vein 2 darkened; the postdiscal line of the forewing only reaches vein 3; hindwing with a distinctly prominent, reddish postdiscal line, but without a submarginal line; a separate, red submarginal spot in 2; anal spot black, proximally bordered with red. Congo District: near Makala and Beni.



- bilineata*. **I. bilineata** B.-Bak. As only the ♀ of this species is known, I could not mention it in the review. Forewing brown with three quarters of the fold, the discal cell and the angle between the veins 2 and 4 whitish, proximally more or less tinged with a very light blue; hindwing brownish, the proximal two thirds covered with a light bluish; a white submarginal line divides the broad, dark marginal band into two parts; anal spot red; a black marginal spot strewn with metallic scales. Both wings beneath white, forewing at the apex and margin darkened, with the two usual brown transverse lines; hindwing with a brown postdiscal line and a yellowish-brown submarginal line as far as vein 3; between vein 3 and the proximal margin a broad red band with a black dot in area 3 and at the anal angle; three small tails. Congo District: Makala.
- hemicyan*  
*us*. **I. hemicyan** Em. Sharpe. To the marks of the ♂ mentioned in the review we only need to add that the hindwing is very convex at the costal margin, the wings beneath being white with the usual dark transverse lines and a fine transverse streak at the end of the discal cell of the forewing, and the black submarginal spot in area 2 and at the anal angle of the hindwing towards the base being broad reddish-yellow. Uganda.
- neavei*. **I. neavei** Ham. Drc. (68 h) is very much like the following species and seems only to differ by the formation of the first small tail of the hindwing. Cameroon.
- agnes*. **I. agnes** Auriv. ♂. Frons above uni-coloured orange, below white. Tibiae and tarsi with very distinct black spots or rings. The blue basal area on the forewing above is very small and distally very slantingly and almost rectilinearly, sharply defined; it only covers the basal half of the discal cell, only reaching vein 2 and terminating at vein 1 and at the proximal margin about 3 mm distant from the margin. Hindwing at the costal margin as far as vein 7 and at the proximal margin in 1 a and 1 b black, otherwise deep blue with a very fine, black marginal line being feebly expanded in the area 6, and a blackish mealy spot. Both wings beneath white with the two usual blackish-grey transverse lines. Hindwing at the margin somewhat darkened; the postdiscal line of the hindwing at the proximal margin between vein 1 a and the centre of area 1 c distally broadly bordered with reddish-yellow; the submarginal line in area 2 passes over into the red bordering of the black submarginal spot and is then thickened as far as the proximal margin, reddish-yellow and decorated with some silvery bluish scales; anal lobe above white with a black transverse spot the proximal red bordering of which is almost entirely covered by the long black hair of area 1 b, beneath with a black and broad red anal spot, hindwing with 2 small tails, at vein 3 only angled. ♀ unknown. Cameroon.
- belli*. **I. belli** Hew. (68 g). ♂. To the marks stated in the review we may add that the mealy spot of the hindwing is rather small and does not extend beyond the discal cell, that the submarginal spot in 1 c is large and quadrangular, that in 2 being small and round; anal lobe above black, proximally red, at the margin white. Under surface white, postdiscal line of hindwing as far as the proximal margin black without the reddish-yellow bordering; the submarginal line between vein 3 and the proximal margin thickened and reddish-yellow; submarginal spot of area 2 large black, also on the sides broadly bordered with reddish-yellow. The ♀ differs above from the ♂ by the blue colour of the forewing being less extensive, at the anal margin 4 mm distant from the margin, the black costal margin of the hindwing reaching vein 5, the areas 1 c to 4 showing black submarginal streaks or spots, and the areas 1 c and 2 besides one rounded, black, postdiscal spot each. Sierra Leone to Cameroon.
- silanus*. **I. silanus** Smith (68 h) is unknown to me, but it seems only to differ from *belli* by the marks mentioned in the review. The ♀ is described as follows: „Upper surface, forewing light blue, towards the base grey, in the middle hued with white; apical third blackish-grey. Hindwing with the lower three quarters blue, hued with grey and towards the margin spotted white; costal margin and apex grey; an undulate, dark grey postdiscal line; anal spot black and red; broad black submarginal spots in 1 c und 2. German and British East Africa.
- sidus*. **T. sidus** Trim. (68 h) differs very much from the other species. Frons almost entirely brownish-red with an indistinct white median line. Legs white, only the tarsi more or less spotted black. Abdomen beneath with an orange longitudinal line. To the description of the under surface stated in the review we must add that the forewing shows a black transverse streak in 1 b near the margin and that the postdiscal line of the hindwing is fine and black between the veins 1 a and 2, the submarginal line, however, being there red or orange and thickened. ♂. Wings above of a delicate light blue; the blue colour of the forewing reaches vein 4 and is distally almost rectilinearly defined; hindwing with a light yellow mealy spot encircled by black, and a red or black submarginal dot in 1 c; anal lobe almost entirely red. In the ♀ the blue parts of the ♂ are whitish-violet, at the base bluish; hindwing with a black costal margin, two dark postmedian transverse lines and an orange-red, black-pupilled submarginal spot also in area 2. South Africa, from Cape Colony to the Zululand.

The following four forms are very closely allied to each other and form a peculiar natural group distinguished by the absence of the hair-pencil of the ♂ forewing. The ♀♀ are known only of one species, whilst the ♂♂ are so much alike that we may give here a collective description. Frons orange, below white. Palpi white, at the apex black. Forewing almost elliptical owing to the anal and distal margins being very much rounded, above black, in the basal part as far as vein 2 (or 3)



light blue; the blue colour generally only occupies the proximal half of the discal cell, being distally slantingly cut off almost in a straight line and at vein 1 about 3 mm distant from the margin; the black apical part hereby attains in the middle a width of about 10 mm. Hindwing above light blue with a fine, black marginal line being in the areas 5 and 6 expanded into an apical spot of 2 to 3 mm width, and a very large, silvery grey spot at the costal margin; the mealy spot itself (of special, erect scales, occurring in other species in the centre of this lustrous spot) seems to be entirely absent here; the areas 1a and 1b grey or blackish. Under surface white; forewing at the apex and margin as far as the postdiscal line distinctly darkened (particularly in the apical part); the transverse lines are greyish-brown; on the hindwing the whole postdiscal line and the submarginal line from the costal margin to vein 3 grey, brown or blackish; between vein 3 and the proximal margin the submarginal line, however, is thickened, dentate and orange-red; in area 2 it converges with the black-pupilled submarginal spot and in this area it also touches the postdiscal line. Anal lobe red, black and white, or above without any red. Forewing beneath at the anal margin with a broad mother-of-pearl lustre or light bluish; according to A. SCHULTZE, in *mildbraedi* on both sides of vein 1 with a feather-shaped scent-spot formed of pale ochreous scales, almost touching the margin; such a spot is not mentioned in the descriptions of the other species, though it may have been overlooked by the authors.

SUFFERT and SCHULTZE do not compare their species with *J. aethria* having been described before by KARSCH. As I was only able to examine *mildbraedi*, it is unfortunately not possible to state the differences of the single species. The descriptions and figures only exhibit insignificant differences.

**I. aethria** Karsch (68 h). Mealy spot on the hindwing above separated by the blue colour from the *aethria*. black apical spot; forewing beneath with a black transverse streak at the end of the discal cell, at the anal margin broad bluish. Legs black and curled white. Togoland.

**I. mirabilis** Ham. Dree. is without the transverse streak at the end of the discal cell on the forewing *mirabilis*. beneath, but otherwise the same as *aethria*. Sierra Leone.

**I. mildbraedi** Arn. Schultze (70 h). The mealy spot of the hindwing above reaches to the black apical *mildbraedi*. spot and thus removes the whole blue colour in 5 and 6; forewing beneath with a fine transverse streak at the end of the discal cell; at the anal margin a mother-of-pearl lustre with the mealy spot mentioned above. Legs white, curled black. The ♀ has the normal shape of the wings of the *Iolaus*-♀♀, the blue colour is light violettish-blue, covering in both wings the whole discal cell; the black, about 2 mm broad marginal band of the hindwing is parted by a white band and separated from the margin by a fine white line of the areas 1 c to 3. Beneath as in the ♂. South Cameroon.

**I. barbara** Suff. (68 g). Hindwing above at the costal margin as far as the black apical spot lustrous *barbara*. grey. Forewing beneath without a transverse streak at the end of the discal cell. „Legs white“. Cameroon: Victoria.

#### Fifth Group of Species.

This group comprises the typical species of the genus and only differs from the fourth group by the thick transverse streak at the end of the discal cell on the forewing beneath. Postdiscal line of forewing and hindwing as far as vein 2 also thick and yellowish-brown; submarginal line also slightly thickened and similarly coloured, between the veins 1 a and 3 of the hindwing coloured red as usually. Anal lobe above red with a black dot and white marginal line. Hindwing with three small tails.

#### Review of the ♂♂.

A. The blue colour of the forewing above only forms an anal-marginal band of 5 mm width, covering the areas 1 a and 1 b almost as far as the margin, and the basal part of the discal cell. Hindwing above as far as the apex only with a fine black marginal line. Under surface brownish-grey. Frons above reddish-yellow, below white. *I. eurisus*.

B. The blue colour of the forewing above almost reaches the costal margin, it is distally rounded, extending beyond the discal cell, but at the anal angle separated from the margin by a black band of 2 mm width. The black marginal line of the hindwing above is somewhat expanded at the apex. Under surface creamy. Frons white, in the middle yellowish-brown. *I. bolissus*.

**I. eurisus** Cr. (= *thurani* Suff.) (69 a). In the ♀ the basal area of the forewing above is light blue *eurisus*. at the base as far as the apex of the discal cell, then in the basal parts of the areas 2 to 5 and in the distal part of area 1 b white. Hindwing above at the costal margin as far as the discal cell and vein 5 blackish, in 1 c to 4 bluish grey, distally whitish with a black discal transverse line, black veins, black submarginal spots in 1 c to 3 and a fine, white marginal line; under surface of a white ground-colour. Sierra Leone to Cameroon.

**I. bolissus** Hew. (69 a, b) is beneath very much like *eurisus*, and above only different by the marks *bolissus*. already mentioned. ♀ unknown. Cameroon and Congo.

#### Sixth Group of Species.

To this group only a single species belongs different from all the others by the marking beneath.

*alienus.*

**I. alienus** *Trim.* (69 b). Frons white, above in the middle with black or reddish-yellow scales. Legs white. Beneath white, at the margin almost as far as the submarginal line darkened by a blackish grey; submarginal line fine blackish, postdiscal line blackish, on the forewing often indistinct and on the hindwing broken up into streaks, on both wings very much thickened at the costal margin, forming two jet-black spots situate in 6 and 8 on the forewing, in 6 and 7 on the hindwing; forewing besides at the end of the discal cell with a large, quadrangular double spot covering the base of the areas 4 and 5; hindwing with two small tails, at the anal angle extended triangularly; anal lobe on both sides white with a black, green-scaled punctiform spot, but without any red scales; a black submarginal spot being at least below proximally scaled reddish-yellow in area 2. ♂. Forewing above at the costal margin as far as the cell, at the apex very broad and at the distal margin 4 mm broad black, otherwise light blue; hindwing at the costal margin as far as vein 6 black and with a fine, black marginal line. The ♀ deviates above by the blue basal area of the forewing being distally in the areas 1 b to 4 white, and by the transverse lines of the hindwing beneath being distinct also above. Mashuna Land and German East Africa near Kigonsera.

### Seventh Group of Species.

The beautiful species of this group are discernible from all the others by both wings beneath showing a broad orange or red-brown basal band. In addition the transverse streak at the end of the discal cell of the forewing and the postdiscal bands of both wings are also very broad and orange or red-brown. Both wings besides generally with a similarly coloured marginal band. Frons orange. Hindwing at vein 3 angular or tailed. Abdomen beneath with a yellow longitudinal line.

### Review of the Species.

A. Submarginal line of both wings beneath broad, coherent and red-brown. Hindwing beneath with a red-brown longitudinal band bordered with black from the base along vein 1 b to the submarginal band.

*I. arborifera.*

B. Submarginal line of both wings beneath represented by black dots or streaks.

α. Hindwing beneath before the proximal margin in 1 b with a broad orange longitudinal stripe extending from the base to the postdiscal band. Basal band of hindwing beneath from the costal margin to the middle of vein 2 coherent. Wings in the ♀ above partly white.

*I. aphnaeoides.*

β. Hindwing beneath without a longitudinal stripe in area 1 b, its basal transverse band is short and only consists of a transverse streak between vein 8 and the median and of a spot in 1 a. Wings in the ♀ above devoid of white.

*I. aemulus.*

*arborifera.*

**I. arborifera** *Btlr.* (69 a). ♂. Forewing above of a bright light blue; the costal margin, apex and distal margin broad black; the blue area anteriorly and distally rounded; hindwing above blue with a black marginal band of 2 mm width, at the costal margin in 6 and 7 white; mealy spot black, round. ♀ unknown. British East Africa: Kikuyu.

*aphnaeoides.*

**I. aphnaeoides** *Trim.* (69 b). The ♂ differs but little above from that of the preceding species. In the ♀ the hindwing and the centre of the forewing above are white, at the base both wings are darkened and covered with a light blue; forewing with a black transverse spot at the end of the discal cell; hindwing with a black postdiscal and submarginal line; the latter broken up into spots. South Africa from Cape Colony to Nyassaland. — **diametra** *Karsch* (69 a) is considered by HAM. DRUCE not to differ from *aphnaeoides*. Although I do not possess sufficient material in order to come to a final decision as to this question, I am inclined to consider *diametra* as the north-eastern race. The ♀ seems at least to differ from the principal form by both wings above being of a purer white with more distinct black markings and with less blue; the black transverse spot at the end of the discal cell of the forewing is triangular and pointed. German East Africa: North Usambara and on Mount Meru. The transverse markings beneath are yellowish-brown instead of light orange in the principal form.

*aemulus.*

**I. aemulus** *Trim.* (68 h). ♂. Forewing above black, in the basal part light blue; the blue colour scarcely reaches the cell-apex and vein 4; hindwing above light blue, at the costal margin as far as vein 6 blackish-grey with a fine black marginal line and black submarginal spots in 1 c and 2; anal lobe white pupilled with black; areas 1 a and 1 b white or grey. In the ♀ the blue colour above is darker and at the base tinged with a blackish grey; the black colour is more extensive at the costal and distal margins. Natal to German East Africa.

### Eighth Group of Species.

The only species belonging hereto differs from all the others by the colouring. Hindwing only with 2 small tails which are uni-coloured black.



**I. pallene** *Wallengr.* (69 b). Both wings above light ochreous or almost creamy; hindwing at the anal angle orange; a fine marginal line and the fringes are black; the apex of the forewing from the middle of the costal margin to vein 3 or 2 black; anal lobe of hindwing with a black transverse streak. Wings beneath orange with a black transverse streak at the end of the discal cell of the forewing and a black discal line on both wings, which is interrupted in 1 c of the hindwing; a black transverse streak close at the margin in 1 b (1 c) and 2. The ♀ resembles the ♂, but it is coloured somewhat paler. German South West Africa, Transvaal, Natal and German East Africa. *pallene.*

#### Ninth Group of Species.

In this group I combine some species placed to *Epamera* by HAM. DRUCE, exhibiting, however, in many respects a habitus foreign to the genus. They are smaller, on an average, than the other species of *Iolaus* and live in open, dry or even desert-like regions where they apparently visit the Acacias, but probably in fact only the Loranthaceae being parasitic on these trees, since their larvae presumably live on these parasitic plants. The species have hitherto only been met with in South Africa, in the Somali Land, Arabia and the Sudan, and are surely altogether absent in the wooded parts of Africa. One species is distributed from Arabia to the south-eastern part of the palearctic region.

By the broad, white or whitish-grey, uni-coloured frons they are at once discernible from the other species. Hindwing only with 2 small tails, of which that at vein 1 b is at least twice as long as the one at vein 2.

#### Review of the Species.

A. Hindwing beneath about midway between the base and the discal transverse streak (at the cell-end) with a distinct, often sharply dentate, dark transverse line.

α. The submarginal line of the hindwing beneath as far as the costal margin fine and distinct. — ♂. Forewing beneath at the anal margin with a black hair-pencil. Hindwing above at the origins of veins 6 and 7 with a black mealy spot.

\*. Both wings beneath of a white or whitish-grey ground-colour. Transverse lines beneath reddish-brown. *I. mimosae.*

\*\*. Both wings beneath blackish-grey with a violet reflection. Transverse lines purely black.

*I. obscurus.*

β. The submarginal line of the hindwing beneath, at the costal margin in the areas (5) 6 and 7 passes over into a large, dark spot (which is unfortunately absent in fig. 69 c).

\*. The blue colour of the upper surface is a bright azure or smalt; hindwing beneath between the discal line and the submarginal line in the areas 4 and 5 not or only irregularly darkened. — ♂. Forewing beneath with a black hair-pencil at the anal margin; hindwing above at the origins of the veins 6 and 7 with a black mealy spot. *I. nursei.*

*I. tajoracus.*

\*\*. The blue colour of the upper surface delicately violettish-blue. Hindwing beneath between the transverse lines in the areas 4 and 5 uniformly darkened, whereby a large, dark, almost quadrangular, sharply defined spot is formed. *I. umbrosus.*

B. Hindwing beneath in the basal part at least as far as the end of the discal cell uni-coloured white without markings.

α. The discal and submarginal lines of the under surface fine and indistinct or entirely absent. — ♂. Forewing beneath at the anal margin with a black hair-pencil; hindwing above without a dark mealy spot.

*I. bicaudatus.*

β. The discal and submarginal lines of the under surface are black, coherent and distinctly prominent. — ♂. Forewing without a hair-pencil; hindwing above at the origins of the veins 6 and 7 with a distinct, black mealy spot. *I. jordanus.*

*I. glaucus.*

**I. mimosae** *Trim.* (70 e). ♂. Wings above lustrous light blue; forewing at the costal margin as far as the discal cell, at the apex as far as the end of the discal cell and vein 3 and between vein 2 and the anal margin about 2 to 3 mm broad blackish; hindwing above at the costal margin as far as vein 7 blackish, at the proximal margin in 1 a and 1 b whitish-grey and at the margin with a very fine black line which is sometimes expanded like a spot at the apex in area 6; anal lobe whitish with a black, green-scaled spot; a black marginal spot in 2 and a similar transverse streak in 1 c; the mealy spot is situate at the base of area 6, jet-black, sharply defined and surrounded by a narrow whitish-grey zone. Under surface light grey with reddish-brown transverse lines; forewing with a transverse streak at the cell-end and the two usual postmedian transverse lines; hindwing with a basal transverse line, a fine streak at the end of the discal cell, a thick, irregular discal transverse line and a fine submarginal line. The ♀ differs but little from the ♂; the dark costal margin of the hindwing reaches to vein 6 and black submarginal streaks appear in all the areas. Cape Colony to Somaliland. *mimosae.*



*obscurus.* **I. obscurus** *sp. nov.* is allied to the preceding species and above very much like it, but the colour is much darker blue. Beneath it deviates by the blackish-grey ground-colour with a violettish reflection and by the black markings; on the forewing a transverse streak at the cell-end and two transverse lines behind the cell-end are black; on the hindwing the basal transverse line is represented by some black streaks or spots, and the irregular discal transverse line is between the veins 2 and 1 b very fine or entirely interrupted; a black marginal spot in area 2. Both the specimens before me originate from Windhuk in the Damaraland and have been accessible to me by the kindness of the superintendent L. PÉRINGUEY.

*bicaudatus.* **I. bicaudatus** *Auriv.* (69 c) is similar to the preceding species, but it has differently shaped hindwings, being oblong triangularly extended at the anal angle, a still lighter blue colour of the upper surface, an almost unmarked under surface and a distinct transverse streak at the end of the discal cell of the forewing. Another peculiarity is the absence of the mealy spot on the ♂ hindwing, or it may be scarcely traceable. Nigeria, in the district of Yola.

*jordanus.* **I. jordanus** *Stgr.* (Vol. I, t. 77 g). This species also occurs in Palestine and has therefore been described in Vol. I. Wings above blackish-grey, in the basal third more or less scaled blue; hindwing in the ♂ with a distinctly prominent black mealy spot at the base of area 6; at the margin with a black anal spot and a black dot in 2, anal lobe and area 1 c at the margin with greenish scales. Under surface whitish-grey with two black transverse lines and on the forewing besides with a black transverse streak at the end of the discal cell; this transverse streak is absent on the hindwing; anal lobe black with green scales and connected with vein 1 a by a whitish yellow line; the black submarginal spot in area 2 is proximally bordered by a whitish yellow (creamy); some green scales in 1 c near the margin. Arabia.

*glaucus.* **I. glaucus** *Btlr.* is described according to a damaged specimen, but it is probably the same species as *jordanus*. The description runs as follows: „Most closely allied to *I. belli*; forewing above blackish with a large, light violettish-blue basal and anal-marginal spot occupying about half of the wing; hindwing blackish-grey, lighter towards the proximal margin which is almost white; the centre of the wing is densely covered with bright violet scales, a submarginal row of spots which are proximally black, distally whitish; a black anal spot proximally scaled green and yellow and probably a similar spot between the small tails; fringes white; a velvety black spot of thickened scales at the base of the subcostal veins (veins 6 and 7); wings beneath white with two distinctly prominent transverse lines (the proximal one of the forewing interrupted at the veins) and the marginal line black; the transverse lines shaped as in *belli*; the black, green and yellow anal spot larger than above; a small similar spot above the anal lobe. Somaliland: Duder.

*tajoracus.* **I. tajoracus** *Wlk.* has remained unknown to me; the type seems even in England to be no more available. The description says: „Expanse of wings: 1 inch 6 lines. Purple-blue. Forewing: a broad stripe at the costal margin, a broad marginal band and the apical third of the wing blackish-brown; a black transverse spot at the end of the discal cell. Hindwing: a large apical spot and an irregular marginal band blackish-brown; the marginal band is bordered with white and encloses at its middle a jet-black punctiform spot; proximal margin bluish-white. Under surface white; a transverse streak at the end of the discal cell and two somewhat dentate transverse lines in the marginal part blackish-brown. Hindwing: a narrow, undulate, blackish-brown band between the base and the transverse streak, and a fine, slanting blackish-brown line between this band and the base; the first distal transverse line forms a long and sharp angle near the proximal margin; the second distal transverse line is near the proximal margin interrupted and shortened, at the apex of the wing terminating into a spot; a jet-black punctiform spot as above; some metallic lustrous green scales between this punctiform spot and the anal angle. Head, thorax, legs and abdomen beneath white.“ *Tajora* (*Tadjura*) on the north-eastern coast of Somaliland.

*nursei.* **I. nursei** *Btlr.* (69 b, c) may perhaps coincide with *tajoraca*. BUTLER's description does not quite exactly correspond with the figure: „Allied with *I. umbrosa*, the wings, however, above light smalt with two whitish dots above each other in the disc of the forewing near the slate-coloured marginal band; fringes of a purer white, towards the anal angle entirely white; hindwing above with 2 or 3 indistinctly defined, white discal dots in a row parallel to the margin; margin white, proximally bordered by a dark stripe which encloses the usual dark spots, and distally by the distinctly prominent black marginal line; fringes purely white with a grey line; wings beneath pearl-coloured with the same markings as in *umbrosa*, the transverse lines, however, blackish-brown instead of reddish. Arabia: Aden; Somaliland. — var. **ertli** *Auriv.* is beneath in the basal part darker; the blue colour of the hindwing above in the middle reaches to the costal margin and in 1 c to 4 to the black marginal line, entirely enclosing the black submarginal dots. German East Africa: Madibira.

*umbrosus.* **I. umbrosus** *Btlr.* Wings above light violettish-blue; forewing at the costal margin, at the apex (very broad) and distal margin black, the blue colour covers the cell, the base of the area 2 (and 3) and the greatest part of the areas 1 a and 1 b; hindwing at the costal margin as far as vein 6 blackish, at the margin narrow whitish with black submarginal streaks and marginal line; anal lobe whitish with a black, green-scaled spot.



Wings beneath whitish, at the base, costal and distal margins more or less tinged blackish-grey, or with large spots of that colour as the figure shows; forewing with a transverse streak at the cell-end and two transverse lines reddish; hindwing with a transverse streak at the cell-end, a basal transverse line and two distal transverse lines, likewise reddish. Somaliland. — **sudanicus** *Auriv.* is smaller and deviates by the under surface *sudanicus*, being almost monotonously whitish-grey with blackish transverse lines. Sudan: near Lake Tchad. Dr. ARN. SCHULTZE who discovered this form, writes about its habits: „The species was flying entirely like an *Iolais* round the blossoms of *Loranthus* being parasitic on the scanty *Mimosae* of the wastes of Turki.

\* \* \*

I herewith append a form described as „*Argiolus*“ (*Argiolaus*?) by G. EHRMANN in the year 1894, which I cannot explain and the systematic position of which is uncertain.

**I. (?) hollandi** *Ehrm.* ♂. — Upper surface: thorax and abdomen brownish strewn with light blue *hollandi*. scales; costal and distal margins brown, at the apex the broadest; a black transverse streak in the middle of the wing; the rest of the forewing beautifully azure. Hindwing above: costal and proximal margins light brown; from the base to the middle of the costal margin a broad black stripe; the rest of the wing azure; anal angle with an orange, black-pupilled spot; fringes brown; the small tails black with white tips. Both wings beneath with a light fawn-coloured ground-colour and six irregular white bands of the hindwing and four of the forewing, besides there is a large, black crescentiform spot on the forewing behind the middle of the cell; anal spot of the hindwing deep chestnut-coloured with a black pupil; between the veins 2 and 3 there is besides an orange black-pupilled eye-spot which is not traceable above. The ♀ resembles the ♂, but it is less lustrous and has a broader, more straightly cut-off marginal band on the forewing above. Expanse of wings about 28 mm.“ Liberia: Grand Sess.

## 12. Genus: **Aphnaeus** *Hbn.*

Although the species of *Aphnaeus* entirely correspond in the structure of the veins with the ♂♂ of the larger forms of *Iolais*, still they deviate considerably from *Iolais* in the habitus. The *Aphnaeus* are robust, Hesperid-like lepidoptera with sharply tapering, almost triangular forewings and at the veins 1 b and 2 tailed hindwings which are lobate on both sides of vein 1 b. Antennae stout with short indistinct joints. Forewing in both sexes with 12 veins. Frons and legs often variegated. Palpi smoothly scaled, not or only little coloured white. Abdomen usually curled white.

The ♀ generally above entirely unlike the ♂. Stages unknown.

The scheme of markings beneath is very characteristic and in fact in all the species the same, although the stages of development are entirely different in different species. The marking consists of numerous light, dark-encircled, usually silvery spots on a dark ground. These spots are sometimes small and separated from each other, sometimes large and more or less connected. Sometimes several of them are reduced or entirely absent. The typical arrangement of these marks (comp. *asterius*) is as follows. Forewing: a dot near the base of the discal cell, two above each other in the middle of the cell (generally united into a transverse band or transverse spot), two or three at the cell-end in 4, 5 and 9 (generally forming a transverse band); one discal spot each in 1 b to 6, 9 and 10; the discal spot in 1 b is slanting and often streak-shaped, and the one in area 4 is regularly situate nearer at the margin than the others; besides there sometimes occur submarginal spots in 1 b, 6 and 7, or even several or one dark submarginal stripe; the submarginal spots are often coloured dark.

The normal hindwing has: 3 basal dots (in 1 a, 7 and the cell), 2 or 3 dots at the end of the discal cell, an irregular arcuate row of discal spots in 1 b to 7, and a dark, sometimes light-spotted submarginal band; in addition the large, differently coloured anal spot. Like on the forewing the spots or dots may here also be more or less fused with each other forming larger groups, as for instance the spots at the end of the discal cell are joined with each other and often also with the discal spot in 7 forming a transverse band, and also the other discal spots may be enlarged and connected with each other into groups or a long transverse band.

### Review of the Species.

I. Hindwing with two distinct small tails, a longer one at vein 1 b and a shorter one at 2.

A. The spots in the middle and at the end of the discal cell of the forewing beneath are combined forming two transverse bands.

α. The spots beneath with a silvery lustre. Wings above with a black ground-colour.

\*. The discal spots of the areas 2 to 6 of the forewing as well as 2 to 7 of the hindwing combined forming broad straight transverse bands. The basal spots of the discal cell and of area 7 of the hindwing also form a broad silvery band. Eyes hairy. *A. orcas*.

\*\*. The discal spot 4 on the forewing beneath is situate much nearer at the margin than the others, the row of the discal spots is thereby sharply interrupted in area 4.

o. Forewing above without white spots in the black apical part.

1. Forewing beneath without a basal spot at the costal margin in area 12. The spot at the end of the discal cell of the hindwing beneath is moderately large and at least united with the discal spot 7.

a. The discal spots 2 and 3 of the hindwing beneath touch the spot at the end of the discal cell and form with this spot and the discal spots 6 and 7 an almost straight transverse band. Eyes hairy. *A. propinquus*.

b. The discal spot 2 of the hindwing beneath is not connected with the spot at the cell-end and is situate nearer at the margin than the latter. *A. argyrocyclus*.

2. Forewing beneath at the costal margin in area 12 with a silvery basal spot which is united with the basal spot of the cell. The silvery spot at the end of the discal cell on the hindwing beneath is large and round, entirely separated from the discal spots. *A. brahami*.

oo. Forewing above with white discal spots in the black apical part and a similar spot at the end of the discal cell, beneath at the base of the costal margin with a silvery spot in area 12.

1. Wings above at the margin blackish. *A. hutchinsoni*.

2. Wings above at the margin with a ferruginous-brown band. *A. drucei*.

β. The spots beneath not with a silvery lustre, ochreous-yellowish with a dark ring, small, and nearly all separate. Wings above with a red-brown ground-colour, at the base blue. *A. rex*.

B. The spots in the middle and at the end of the discal cell on the hindwing beneath are small, punctiform, silvery white, eurred black, and separate. Frons with white lateral margins. *A. asterius*.

II. Hindwing with only one small tail at vein 1 b.

α. Discal spots of hindwing beneath small and separate.

\*. Wings above at the base blue; ground-colour black or only at the margin yellowish-brown. Spots beneath with no or only little silvery lustre. *A. questiauxi*.

\*\*. Wings above with a bright, yellowish-brown ground-colour without blue at the base. Spots beneath with an intense silvery lustre. *A. marshalli*.

β. Discal spots of the hindwing beneath united into a brownish-yellow transverse band bordered with black between the veins 2 and 6. *A. erikssoni*.

*orcas*.

**A. orcas** *Drury* (69 c). ♂. Forewing above lustrous blue, at the costal margin narrowly black, at the distal margin 3 to 5 mm broad black, in the discal cell and behind it with 3 round black spots. Hindwing above black, at the proximal margin in 1 a, 1 b and 1 c dark brown; the posterior longitudinal half of the discal cell and the areas 2 to 5 with lustrous blue scales at a distance of 2 mm from the margin; vein 1 b distally bordered with blue; anal region broadly ferruginous with black spots; small tails black with white tips. Beneath with an ochreous ground-colour which, however, is only noticeable as a narrow line between the large, silvery spots and bands broadly bordered with purple-red; forewing with the following silvery markings: a rounded basal dot in the cell, a transverse band across the middle of the cell as far as vein 12, a similar transverse band at the end of the cell as far as vein 11, a broad, almost straight discal band between the veins 2 and 9, a slanting spot in 1 b behind the middle, a spot in the proximal part of the same area and some dots in the dark red submarginal band; the hindwing has a transverse band near the base in the cell and in 7 and 8, a very broad discal band between the costal margin and the centre of area 1 c (being created by the fusion of the discal spots and the spot at the end of the discal cell), three spots at the proximal margin in 1 a to 1 e, and some silvery scales on the broad purple-red submarginal band; anal spot as above though much lighter, orange. Frons red-brown with white margins; palpi brownish, in the middle more or less white. — The ♀ is entirely unlike the ♂ on both surfaces. Wings above uni-coloured dark brown, in the marginal half somewhat lighter, greyish-brown; forewing sometimes with a round, lighter spot at the end of the discal cell. The under surface looks quite different by the markings and especially the purple bordering of the silvery spots being very much reduced; the light greyish-yellow ground-colour is thereby predominant; the spots and bands are otherwise the same; the discal spots, however, are round and appear as separate, though contiguous spots; on the hindwing it is distinctly to be seen that the spot at the cell-end participates in the formation of the discal band. Sierra Leone to Gabun. — **hollandi** *Btlr.* (= *rattrayi* *Em. Sharpe*, *helioborus* *Schultze*) is the southern and eastern race only differing from the type by the darker under surface. Congo District and Toro.

*hollandi*.



**A. propinquus** Holl. (69 c). The ♂ is above similar to the preceding species, but beneath it differs *propinquus*. by all the silvery spots being smaller and the ground-colour dark chestnut; the discal spot 4 of the forewing is situate nearer at the margin than the others and separated from them; on the hindwing the median spot (at the cell-end) and the discal spots 2, 3, 6 and 7 form an almost straight transverse band; the discal spots 4 and 5, however, are separate on the outside of this transverse band. ♀ unknown. Ogowe River.

**A. argyrocyclus** Holl. is only known in the female and only differs beneath from *propinquus* by the *argyrocyclus*. marks stated in the review. The upper surface, according to HOLLAND, is dark greenish brown, in a certain light lustrous blue; at the end of the discal cell of the forewing a large white spot and behind it a subapical row of minute, indistinct spots. It is presumably the ♀ of *propinquus*. Ogowe.

**A. brahami** Lathy (69 c). ♂. Wings above black; forewing with a blue basal spot covering the bases *brahami*. of the areas 1 a to 2 and of the distal cell; hindwing in the middle with a triangular blue area almost as in *orcas*; beneath all the discal spots are distinct and separate, or only united in pairs. Nigeria.

**A. hutchinsoni** Trim. (69 d). ♂. Forewing above blackish-brown, in the basal third blue and in the *hutchinsoni*. apical part with a round white spot at the cell-end and one white discal spot each in 2 to 6; hindwing above almost entirely coloured and marked as in *orcas*. The under surface is olive-coloured and distinguished by the large, mostly round silvery-spots encircled at first by black, then by purple red. Frons red-brown with white sides. Eyes finely haired. ♀ unknown to me. Natal to British East Africa.

**A. drucei** Neave only differs from *hutchinsoni* by the mark stated in the review and on the forewing *drucei*. above by the costal margin being red-brown as far as the middle. German East Africa.

**A. asterius** Plötz (69 d). ♂. Wings above jet-black; forewing in 1 a to 2 as far as close to the margin *asterius*. blue and with blue spots or dots in the cell and in 3 to 6; hindwing with a triangular blue area covering the greatest part of the areas 2 to 4 and the posterior margin of the discal cell. Under surface deep ferruginous-brown with small, punctiform, black-ringed silvery spots all of which appear as separate spots and are arranged in the way mentioned in the description of the genus on p. 407; the discal spot 4 of the forewing is somewhat larger than the others, and the one in 1 b is long, slanting and streak-shaped. Eyes bare. Frons blackish-brown, in the middle lighter with white lateral edges. Palpi yellowish-brown, at the tips black. Sierra Leone to Ogowe. — ab. **argenteola** Holl. (69 d) has smaller dots beneath, and the discal spot 4 of the forewing is long *argenteola*. and narrow, streak-shaped. Ogowe.

**A. rex** Auriv. (69 h) is the largest and most beautiful of all the species known and by its colouring *rex*. and marking it forms a transition to the species with one small tail of the hindwing. ♂: wings above beautifully chestnut-brown with a black marginal line and white fringes; forewing in 1 a and 1 b as far as 4 to 5 mm from the margin and in the basal half of the discal cell blue, at the end of the cell with a round light yellow spot and small, ring-shaped, whitish-pupilled discal spots in 1 b to 6; hindwing in the cell and in 1 c to 4 as far as beyond the middle covered with blue; two white-pupilled discal spots (in 4 and 5); small tails yellowish-brown. Under surface yellowish-brown with dark-curved, separate spots filled up with a lighter yellow. Frons reddish-yellow with silvery white lateral stripes. Palpi whitish-yellow; the apex of the second joint and the third joint brownish-yellow or brown. Legs for the greatest part red-brown. Thorax and median line of the ventrum as well as the segmental edges of the abdomen white. German East Africa near Kigonsera.

**A. questiauxi** Auriv. (69 h). This species is very much like *rex* in the marking and often also in the *questiauxi*. colouring, but it differs by the wings above showing a blackish ground-colour, in contrast to which the white discal spots are distinctly prominent; in the ♂ the ground-colour is at the margin broadly hued with a ferruginous brown. Beneath sometimes bright brownish-yellow, sometimes yellowish grey. Southern Congo District: Katanga.

**A. marshalli** Neave (69 d). ♂. Wings above bright chestnut-brown with a narrow black marginal *marshalli*. band and white or grey fringes; forewing besides at the costal margin more or less black and with ring-shaped, black, light-pupilled discal spots, at least in 4 to 6; a round, light yellow spot at the end of the cell; small tails of the hindwings ferruginous-yellow. Wings beneath somewhat darker chestnut than above with moderately large, black-ringed, separate silvery spots; the discal spots 2 and 3 of the forewing and 3 to 5 of the hindwing often seem to be absent; anal region of hindwing and anal margin of forewing yellow. ♀ unknown. This pretty species was met with in Mashunaland and in the district of Tanganyika in the upper valley of the Lofu River.

**A. erikssoni** Trim. (69 d). ♂. Both wings above chestnut-brown, at the margin narrow black; forewing *erikssoni*. at the base in the areas 1 a, 1 b, and in the cell narrow light blue with round, yellow, black-ringed discal spots in 2 to 6 and a similar median spot; hindwing along vein 1 b with some blue scales and with small, yellow discal spots in 4 and 5. Under surface with a reddish-grey ground-colour and black-ringed, brownish-yellow



spots, the discal spots of the hindwing form a coherent, feebly bent band, and both wings have a complete row of submarginal spots, which is contiguous on the hindwing; small tails ferruginous-yellow. The ♀ is somewhat larger and deviates by the blue basal spot of the forewing being absent and the ground-colour much darker, somewhat smoky, particularly the hindwing beneath is tinged blackish. Angola, Rhodesia and Mashunaland.

### 13. Genus: **Spindasis** Wallengr.

The species of *Spindasis* deviate from *Aphnaeus* by the scheme of markings and by the structure of the veins. Forewing only with 11 veins, of which vein 7 terminates into the apex or costal margin. Hindwing always with two small tails. Eyes bare. Antennae strongly built with short joints. The stages of development of the Ethiopian species are unknown. The genus also occurs in the Indo-Malayan region.

The numerous species may be divided into two groups.

#### Review of the Groups of Species.

- I. The transverse bands on the forewing beneath all commence at the costal margin itself. Forewing above at the margin at least 2 to 3 mm broad blackish-brown. First Group.
- II. The markings on the forewing beneath do not reach to the costal margin, but they are all separated from it by a distinct interspace. Second Group.

#### First Group of Species.

The species are closely allied and all have a similar marking on both surfaces.

The black ground-colour above is almost invariably lighter or darker blue at the base and at the anal margin of the forewing and beyond the middle of the hindwing; the blue colour has a more or less intense reflection and is not distinctly defined. Forewing normal with three orange transverse spots or transverse bands which are rarely grey and indistinct, the first often being small is situate in the centre of the wing and consists of a spot in the cell and often also of spots in 2 and 1 b; the second is formed by discal spots of the areas (1 b) 2 to 6, and the third is composed of 3 to 6 submarginal spots of the areas (1 b to 3) and 4 to 6. If all the spots of the second and third bands are present, the bands, are usually fused in the areas 1 b to 3 forming a band. The hindwing generally has an orange anal spot and white streaks or dots before the margin in the areas 1 c to 3 or 4.

The marking beneath is of great importance for the distinction of the species and must therefore be dealt with here at large. The ground-colour beneath is white or straw-coloured or ochreous-yellow, and the markings are almost invariably encircled by dark and filled up with metallic.

On the forewing beneath there are: 1. one or two spots close at the base, the basal spots; 2. a spot in the first quarter of the discal cell, which may also be prolonged into area 12, though it does not reach the costal margin, the subbasal spot; 3. a transverse band from the costal margin across the middle of the cell at least as far as the base of vein 2, the first transverse band; 4. a transverse band from the costal margin right across the terminal vein of the discal cell, the second transverse band; 5. a transverse spot at the costal margin, usually ending already at vein 6, the third transverse band; 6. a transverse band in the middle between the discal cell and the apex of the wing, extending almost parallel to the margin from the costal margin to vein 4 or still farther, the fourth transverse band, and 7. two dark submarginal lines parallel to the margin, the proximal one of which may now and then be double or thickened, though never in its full length.

On the hindwing beneath the following markings occur: 1. six or seven basal dots either separate or arranged in two transverse rows (first row in 1 a, the discal cell and 8; the second in 1 c, the discal cell and 7) or united into a broad basal band; 2. a longitudinal streak on vein 1 b from the base to the middle of the vein; 3. a transverse band forming a continuation of the first transverse band of the forewing, extending from the costal margin to vein 2 in an almost straight line and then turning round in a sharp angle towards the middle of the proximal margin, the first transverse band; 4. a transverse band starting at the costal margin near the apex and reaching at least vein 4, the second transverse band; 5. two submarginal lines, the proximal one of which may be more or less thickened or irregularly double.

In order to make use of the following review of the species, the description of the marking stated above must be closely observed.



## Review of the Species.

- I. Ground-colour beneath at least for the greater part white, with or without a silvery lustre.
- A. Forewing beneath at the base of the costal margin in area 12 reddish-yellow or yellow, without any basal and subbasal spots. Transverse bands of both wings separate. Ground-colour beneath with an intense silvery lustre.
- α. Both wings above with a violettish-blue reflection; forewing with more or less developed yellow markings. *S. phanes.*
- β. Both wings above brown without a blue reflection; forewing without any yellow markings. *S. waggae.*
- B. Forewing beneath with basal and subbasal spots which are more or less flown together. The transverse bands beneath more or less, sometimes almost reticularly, flown together.
- α. Ground-colour beneath with a silvery lustre. Forewing above with orange spots. *S. namaqua.*
- β. Ground-colour beneath white without a silvery lustre. Spots of forewing above at least partly of a pure white. *S. somalina.*
- II. Ground-colour beneath straw-coloured or ochreous-yellow.
- A. The fourth transverse band of the forewing beneath is coherent, straight or almost straight, ending separate at vein 4 or in area 3. The third transverse band of the forewing beneath is very short and reaches vein 6 at most; the second, however, reaches at least vein 2, generally also vein 1.
- α. Forewing above at the base of the costal margin blackish-grey or blackish.
- \*. Forewing beneath at the base of the costal margin (in area 12) with a basal and usually also a subbasal dot; the latter is fused with the subbasal spot of the discal cell forming a small transverse band. The yellow transverse bands of the forewing above usually distinct, in the ♂ separate; in the ♀ the two distal ones are posteriorly united, and the first white or whitish. Marginal streaks of the hindwing above thick and distinct. Frons light yellow with a black median line.
1. The second transverse band of the hindwing beneath straight as far as the costal margin.
- a. The proximal submarginal line of the forewing beneath at the costal margin distinctly expanded as if double. The first transverse band of the hindwing beneath from the costal margin to vein 2 almost straight; the submarginal lines distinct, red-brown and almost complete. *S. natalensis.*
- b. The proximal submarginal line of the forewing beneath not expanded at the costal margin. The first transverse band of the hindwing beneath between the costal margin and vein 2 distinctly bent towards the base; the proximal submarginal line sulphur-yellowish, the distal one incomplete. *S. nyassae.*
2. The second transverse band of the hindwing beneath at the costal margin flawed or somewhat interrupted, the spot in 7 being situate nearer at the margin than that in 6. Submarginal lines of forewing beneath plain and almost straight. First transverse band of hindwing beneath feebly bent. First transverse spot of forewing above also in the ♂ white. *S. victoriae.*
- \*\*. Forewing beneath at the base of the costal margin (in area 12) without spots.
- §. The black basal stripe in area 1 b of the forewing beneath reaches the base of vein 2 at most, or is indistinct.
- o. The transverse bands beneath filled up with a light yellow or orange, bordered with black. Transverse markings of forewing above normally developed, orange. Frons light yellow with a black median line. *S. mozambica.*
- oo. The transverse bands beneath ferruginous, only on the forewing bordered with black. Submarginal lines also ferruginous. Frons more or less orange. *S. apelles.*
- §§. The black basal streak in area 1 b of the forewing beneath is narrow and is continued as far as beyond the middle of vein 2. Transverse bands of forewing black filled up with silvery white, hindwing ferruginous-yellow without any black bordering. *S. avriko.*
- β. Forewing above at the base of the costal margin (in area 12) orange and with broad orange transverse bands. Hindwing above with a bright blue reflection.
- \*. Markings beneath little darker than the ground, grey, bordered with black. *S. modesta.*
- \*\*. Markings beneath ferruginous-yellow; transverse bands bordered with brown. Both transverse bands of the hindwing beneath irregular as if divided into parts, in area 6 contiguous. *S. homeyeri.*
- B. The fourth transverse band of the forewing beneath irregular, extended to vein 2 or 1, but sometimes interrupted in area 5. Forewing beneath at the base of the costal margin with the base and subbasal spot in area 12.

α. The third transverse band of the forewing beneath is (as in all the species of division A) very short and reaches vein 6 at most; the second ends at or a little behind the base of vein 3 or it is accompanied by an independent, slanting spot in area 2.

\*. The fourth transverse band of the forewing beneath is somewhat serpentine, but coherent as far as vein 1.

1. The usual yellow transverse markings of the forewing above large and distinct; under surface of a straw-coloured ground-colour and with narrow transverse bands filled up with light yellow; the fourth transverse band of the forewing beneath at vein 4 bridged over by its black bordering. *S. ella*.

2. The yellow markings of the forewing above in the ♂ narrow and rather indistinct; beneath of a yellow ground-colour and with broad transverse bands filled up with ferruginous-yellow; the fourth transverse band of the forewing beneath entirely interrupted. *S. tavetensis*.

\*\*. The fourth transverse band of the forewing beneath very irregular, composed of 2 or 3 divisions which are entirely separate or only contiguous.

1. The first division of the fourth transverse band of the forewing beneath extends from the costal margin to vein 4, where it turns round in a sharp angle towards the margin and reaches the proximal submarginal line, proximally and posteriorly it touches a rounded spot in area 3 and is further continued by similar spots in 2 and 1 b. *S. trimeni*.

2. The first division of the fourth transverse band of the forewing beneath extends from the costal margin only to vein 6; the second division is very slanting, beginning at vein 6 close within the first division, and at vein 4 it touches the distal submarginal line; the third division is separate and slanting between the veins 4 and 2 and in an almost straight continuation of the third transverse band to which it could also be reckoned. *S. menelas*.

β. The third transverse band of the forewing beneath reaches vein 5, it is narrowly interrupted in area 4 and then continued at least to vein 2. The fourth transverse band is composed of two separate spots, one from the costal margin to vein 6 and one in area 4. The transverse bands of the hindwing beneath are interrupted in the middle. *S. iza*.

*S. crustaria*.

As the marking above being common to nearly all the species has already been dealt with above, and the differences of the under surface have been dealt with in the review of the species, I do not consider it necessary to describe the species once more at large, and therefore only add some supplementary remarks.

*phanes*. **S. phanes** *Trim.* (69 d, e). Forewing beneath only at the costal margin as far as the veins 5 or 6 with a silvery lustre, then white or yellowish-white; the proximal submarginal line on both wings thickened and on the hindwing at veins 2 and 5 respectively often united with the serpentine transverse bands; hereby the lustrous silvery ground-colour is divided into separate longitudinal bands. The ♀ differs by the transverse bands of the forewing above being much broader, the first being whitish and the two others united with each other in the areas 3 to 1 b; the hindwing being in the ♂ above uni-coloured and with a blue reflection, show in the ♀ behind the middle two light, sometimes quite orange transverse bands which are united into one in the areas 2 and 3. Damaraland to Transvaal and Natal.

*waggae*. **S. waggae** *E. Sharpe* is unknown to me; as the description does not mention anything about the basal and subbasal spots, it is doubtful whether the species belongs to the division 1 A or I B of the review. The description runs as follows: „Most closely allied to *S. namaqua* *Trimen* by the colouring beneath, immediately discernible by the absence of the blue colour above. ♂. Forewing above uni-coloured brown, with some bronze lustre and two black spots, the first at the cell-end, the other nearer at the base. Hindwing similar to the forewing, but without the bronze lustre; at the anal angle there is a bright orange spot accompanied as far as the middle of the margin by whitish submarginal streaks. Beneath of a brown ground-colour\*) and with white, lustrous silvery spots bordered with black, being distributed across the whole surface without forming regular bands or rows except a row of white submarginal dots; the orange anal spot of the hindwing is parted by a silvery spot and has near the proximal margin a black spot. The ♀ is similar to the ♂, but larger, and above on both wings with a bronze lustre; the orange anal spot is not so brightly coloured.“ Somaliland.

*namaqua*. **S. namaqua** *Trim.* (69 e). ♂. Hindwing above almost entirely and forewing at the anal margin broad dark blue; the orange transverse markings of the forewing small and separate. In the ♀ both wings above orange with black margins and some black transverse bands or spots. Cape Colony and Namaqualand.

\*) Miss SHARPE evidently considers the markings beneath to be the ground-colour and the ground-colour to be the spots.



**S. somalina** Btlr. (69 a). Wings above in both sexes in the usual extent with a bright dark blue lustre; *somalina*. the spots of the forewing above in the ♀ of a pure white, in the ♂ at least partly white. The bands beneath elay-coloured with leaden dots, serpentine and connected with each other, so that the white ground-colour is divided into spots. Somaliland.

**S. natalensis** Dbl. & Hew. (69 e). In the ♂ of the type the forewing above shows the three usual orange *natalensis*. transverse spots and beneath a distinct subbasal spot in area 12. South Africa to the Damaraland, the Victoria Falls, the Manicaland and Querimba in Portuguese East Africa. — ab. **obscura** ab. nov. deviates by the apical *obscura*. half of the forewing above being almost quite black, except traces of a reddish-yellow discal spot in area 4, and the subbasal spot in area 12 beneath being absent (the basal spot, however, being present). Natal.

**S. nyassae** Btlr. only differs from *natalensis* by the marks stated in the review, and is probably only *nyassae*. a race of it. Nyassaland.

**S. victoriae** Btlr. is likewise closely allied to *natalensis*. The differences are mentioned above in the *victoriae*. review of the species. Ovamboland, German and British East Africa.

**S. mozambica** Bertol. (69 e, f) is somewhat smaller than *natalensis* and has a larger orange anal spot *mozambica*. on the hindwing above; the under surface is light yellow with transverse bands filled up with light yellow or orange and being bordered with black on the forewing, and subtile black or ferruginous-brown on the hindwing; the proximal submarginal line of the hindwing beneath is bright orange and posteriorly very much expanded. Sierra Leone to Togo; South Africa to Ovamboland and Nyassaland.

**S. apelles** Oberth. (69 f) only differs from *mozambica* by the marks mentioned in the review. The *apelles*. transverse bands on the forewing above are sometimes only indistinct and greyish, sometimes narrow and orange. German East Africa. — **nairobiensis** E. Sharpe is a race or temporary form only differing by the *nairobiensis*. broad, sharply defined, yellow transverse bands of the forewing above. British East Africa, Nairobi. Belgian Congo, Nyassaland.

**S. avriko** Karsch (69 f) is probably described according to a female specimen. The upper surface *avriko*. is dark brown without a blue reflection and with broad, but hued blackish and therefore indistinct yellow transverse bands of the forewing, the two distal ones of which are posteriorly united; anal spot of hindwing orange with two black dots pupilled silvery white. The under surface is similar to that of *mozambica* and only different by the basal dots of the hindwing being larger and pupilled with reddish-yellow, and by the black line in area 1 b of the forewing being so much prolonged. Togo.

**S. modesta** Trim. is unknown to me, but it seems only to differ from the following species by *modesta*. the marks stated in the review. Ovamboland.

**S. homeyeri** Dew. (69 f) is the most brightly coloured species of the genus and at once recognizable *homeyeri*. by the reddish-yellow base of the costal margin of the forewing. Transverse bands of forewing above broad, distinctly prominent, bright orange; the blue reflection above very bright; markings beneath almost quite reddish-yellow. Frons lighter or darker yellow without a black median line. Southern Congo District, Angola, Ovamboland, Rhodesia, Manicaland, Nyassaland, German East Africa. — **kallimon** Ham. Drc. only differs *kallimon*. by darker markings beneath being completely filled up with ferruginous-brown, and is certainly only a temporal form of *homeyeri*. Rhodesia.

**S. ella** Hew. (69 f, g). To the detailed description in the review we only need to add that the wings *ella*. above are reflecting blue as in *mozambica*, but that the orange anal spot of the hindwing above is absent. Cape Colony to German East Africa.

**S. tavetensis** Lathy (69 g) only deviates from *ella* by the marks mentioned in the review of the species, *tavetensis*. and is probably a race of it. British East Africa near Taveta.

**S. trimeni** Neave (69 g). This species is compared by NEAVE with *S. natalensis* and *victoriae* and is *trimeni*. also above very similar to the latter species. But if one considers the under surface, *trimeni* in my opinion belongs near *ella* from which it only differs by the marks mentioned above. The first transverse band of the forewing above is white and accompanied by a large similar spot in area 1 b; the transverse bands of the hindwing beneath are irregular, parted into divisions, the second ends separate. Rhodesia.

**S. menelas** Ham. Druce (69 g) is only known in the female and differs from all the species enumerated *menelas*. so far by the colouring above as well as by the quite irregular arrangement of the markings beneath. Both wings above black with a large orange median spot which on the forewing is situate between the anal margin

and vein 6 and encloses 5 black spots (in 2 to 5 and the discal cell), and on the hindwing covers the base of the areas 2 to 5 and the apex of the discal cell, whilst at the forewing it has two deep indentations of the black ground-colour. The second transverse band of the forewing beneath is short and terminates at the base of vein 3 entirely separated from the other markings. The first, very irregular transverse band of the hindwing is interrupted in the areas 3 and 4, the aperture, however, is closed by the second transverse band being interrupted in area 6; the proximal submarginal line of the hindwing is very much widened and filled up with silvery white. Nigeria.

*iza*. **S. iza** Hew. (69 g) differs from all the other species by the marking beneath described in the review. HEWITSON described the species according to a ♀ (alleged to be ♂) and says that the upper surface is „brown with dark spots“. The markings beneath are ferruginous-brown. Gabun.

*crustaria*. **S. crustaria** Holl. (69 h) was described according to a ♂: „Wings above *Morpho*-blue; costal margin and apical third of forewing as well as the anal region of the hindwing black.“ The marking beneath seems to agree with that of *iza* and only to differ by the spots being bordered with a reddish grey. It is probably only a race of *iza*. A ♀ before me above entirely corresponds with the description of *iza*, but it has the silvery markings beneath broadly bordered with black; the hindwing beneath has 3 black submarginal lines. Ogowe and Congo District.

### Second Group of Species.

Although the markings beneath are chiefly arranged as in the first group, it is peculiar to all the species of the second group that these markings never reach entirely the costal margin of the forewing. In the latter species the upper surface has a colouring quite different from the normal type of *Spindasis*.

### Review of the Species.

A. Forewing above with a distinct, straight, black submarginal band separated from the margin by the lighter ground-colour. Both wings beneath with three submarginal lines, the most distal one of which is sometimes broken up into dots, whilst the two proximal ones may be united into one band.

α. Ground-colour above light orange or ochreous-yellow with reduced transverse markings being blackish-brown on the forewing, yellowish-brown on the hindwing. *S. bellatrix*.

β. Wings above with a whitish-yellow or whitish ground-colour which, however, is for the greater part removed by the broad and strong black transverse bands or transverse spots and is often only more extensive in the middle and at the costal margin of the forewing.

\*. The second transverse band of the forewing beneath is not straight and more or less interrupted. *S. nilus*.

*S. kaduglii*.

\*\*. The second transverse band is straight, coherent, and reaches vein 1.

*S. subaurea*.

B. Forewing above at least at the costal margin, apex and distal margin black, without a special marginal band; otherwise violettish-blue or orange or only with an orange anal-marginal spot. Hindwing above for the greatest part orange or violettish-blue. Forewing beneath before the margin with two transverse rows of 6 or 7 dots each, the proximal ones of which are distinct and filled up with silver, whilst the distal ones are indistinct or entirely absent.

α. Hindwing beneath with a dark, greyish-brown ground-colour being ferruginous-brown at the margin. Wings above extensively violettish-blue (♂) or orange (♂).

1. ♀ hindwing above at the costal margin broad black.

*S. aderna*.

2. ♀ hindwing at the costal margin not broad black.

*S. loxura*.

β. Both wings beneath light whitish-yellow with distinctly prominent ferruginous markings. Forewing above black with an orange anal-marginal spot which in the ♂ may sometimes be very small.

*S. leonina*.

*bellatrix*. **S. bellatrix** Btlr. is probably only a southern race of the palearctic species *S. acamas* Klug. (Vol. I, p. 279, t. 75 i). Wings above light ochreous, along the costal margin of the forewing as far as the median lighter and at the anal angle of the hindwing whitish; forewing with a transverse band at the end of the discal cell as far as vein 2, a transverse spot behind the cell, reaching the vein 4, and a third spot reaching vein 6; in addition a submarginal band almost broken up into spots, ending behind at vein 2; these markings are dull brownish. Margin and fringes narrow blackish; hindwing above without any other markings but the dull diaphanous transverse bands of the under surface; anal region whitish. Under surface dull white with transverse bands filled up with light yellowish; the space between the two proximal submarginal lines is also filled up with yellow, whereby a distinct submarginal band is created; the most distal submarginal line is broken up into dots. Nubia near Suakin, and Somaliland.



✓ **S. nilus** *Hew.* is only known to me by the figure of the female typical specimen. Wings above at *nilus*. the margins blackish, otherwise dark grey or yellowish whitish-grey with thick blackish transverse bands: forewing with a transverse spot at the middle of the cell, a transverse band at the apex of the cell, one between the costal margin and vein 4, and a broad, somewhat bent submarginal band uniting with the second transverse band in area 1 b; between these bands the ground-colour is lightest, yellowish whitish-grey, but parted by the third transverse band; on the darker hindwing three blackish transverse bands, one from the costal margin across the apex of the cell to the anal angle, one from the costal margin to vein 4, and a complete, bent submarginal band. Under surface whitish-grey, at the margin somewhat darker with the marginal bands surrounded by black, which are not or only slightly darker than the ground-colour; the two proximal submarginal lines therefore appear as lines; hindwing with a red spot at the end of vein 1 b. On the White Nile and (?) in Nigeria.

✓ **S. kaduglii** *Beth. Baker* is described to be closely allied to *S. victoriae*. The description, however, *kaduglii*. clearly proves that this species is either coincident with *S. nilus* *Hew.* or only a race of it. The description runs „♂. Head and collar very light fawn-coloured; both wings faded straw-coloured, very much darkened by blackish markings; forewing with the base light brownish terminating into a darker transverse band; costal margin broad light brownish; the postmedian band broad, at vein 4 distally angularly broken, continued as far as behind vein 2, and united at vein 2 with the broad, dark submarginal band which gradually widens from the costal margin towards the anal angle; the subcostal triangle of spots also touches the submarginal band; between the latter and the marginal band there are traces of a light line. Hindwing almost entirely darkened; the short, broad subapical spot and the broad submarginal stripe are the only distinct markings.“ The rest of the description entirely fits to *S. nilus* as well as *S. subaurea*. Cordofan.

✓ **S. subaurea** *Smith* (69 g) is above similar to *kaduglii*, though with a lighter, whitish ground-colour *subaurea*. in the middle, and between the marginal band and the submarginal band distinctly lighter yellow. Under surface with a yellowish-white, creamy ground-colour, and at the margin as far as the most proximal submarginal line darkened with a light brownish yellow; the markings are surrounded with black or ferruginous and not or slightly darker than the ground-colour and decorated with lustrous silvery or leaden spots; the third transverse band only consists of a small spot in 8, the fourth, however, of three spots in 6 to 4, of which, however, that in 5 is much nearer at the base than that in 6; we might therefore consider the spots in 5 and 4 to belong just as well to the third transverse band. The first transverse band of the hindwing is almost straight between the costal margin and vein 1 b, the second terminates at vein 4; vein 1 b is sometimes orange at its apex. Nigeria near Lokoya and in North Cameroon.

**S. lutosa** *Plötz* is described according to a specimen being so badly preserved that I was unable to *lutosa*. determine or to describe the species, when I saw the type many years ago. The original description says: „The upper surface is brown, with a blue tinge towards the margin of the hindwing, the under surface is light brown with some darker brown, whitish-pupilled transverse spots and a dirty white, almost triangular spot the broadest base of which is in cell 1, behind the middle of the forewing. The two tails of the hindwing are fine and short. Forewing 14 mm.“ Ashanti, near Aburi. The species can only be approximately indicated by a new examination of the typical specimen.

**S. aderna** *Plötz* (♂ = *fallax* *E. Sharpe*; ♀ = *latifimbriata* *E. Sharpe*) (70 a). Wings beneath with *aderna*. a brown ground-colour reflecting grey particularly on the hindwing, being broadly lighter yellowish at the anal margin of the forewing; the marking consists of silvery streaks or dots which are usually finely bordered with black and then more broadly with red-brown or ferruginous-brown; forewing with two similar streaks in the discal cell, one at the end of it, a basal dot in 1 b, a discal, almost straight transverse streak between the veins 1 and 4, a transverse streak somewhat nearer at the margin-between 4 and 6, and one dot each in 6, 8 and 9; rather distantly before the margin a transverse row of 7 silvery, only distally black dots in the areas 1 b to 6; hindwing with two dots in the discal cell and one each in 1 a, 1 c, 7 and 8, a transverse streak at the end of the cell, a discal band being only interrupted at vein 7 and otherwise almost coherent, in the area 1 c, however, rectangularly bent round towards the proximal margin, and a similar, though quite coherent submarginal band being bent round already at vein 2; the latter band usually has no silvery scales between the veins 2 and 7 and is therefore uni-coloured ferruginous there; anal lobe more or less black, a silvery marginal spot in 1 c. Above the sexes are quite different; in the ♂ the wings are bright violettish-blue, the forewing at the apex broad, at the distal and costal margins narrow black, the hindwing all round black with a large orange anal area; in the ♀ the forewing has a large orange anal-marginal spot reaching at least vein 5; hindwing orange, only at the costal margin broad black and with a fine black marginal line. Sierra Leone to the Congo District and Kavirondo in Uganda. — **spindasoides** *Auriv.* By a regrettable error of obser- *spindasoides*. vation I was induced to describe this form as an *Aphnaeus*; on a close examination I have found that the forewing has only 11 veins, vein 8 being absent and vein 7 terminating into the apex of the wing as in all the species of *Spindasis*. The form is in fact so closely allied to *S. aderna* that I can now only consider



it to be the eastern race of it. The ♂ differs from that of *S. aderna* by the anal region of the hindwing above being dark nuber-coloured (not orange). The ♀ is unknown to me. „German East Africa“: Kigonsera.

*loxura*.

**S. loxura** Rebel is unknown to me and described according to a single ♀ from the plains of Rutchuru in Central Africa. Forewing black with a very large, reddish-yellow anal-marginal spot extending to vein 4, leaving the base of the wing broad black and being also separated from the margin at the anal angle by a black margin. Hindwing reddish-yellow with a fine black margin and a blackish anal lobe exhibiting a coarsely scaled, brown, small tail of 5 mm length with a black median line; on vein 2 a much finer, short tail. The under surface resembles more that of *S. aderna*, but it is darker and much more distinctly marked, particularly the distal brown transverse stripe of the hindwing is very prominent. The forewing has a sharper apex and a more convex margin than in *S. aderna* in which the hindwing is also at the costal margin broadly bordered with black. Length of forewing: 14 mm.

*leonina*.

**S. leonina** deviates from all the other species by the peculiarly marked under surface. The ground-colour beneath is very pale, light yellow, with sharply defined, red-brown or ferruginous-brown discal areas and often also with such marginal bands or such spots at the margin; the silvery spots surrounded with black are entirely or almost entirely absent in the light ground-colour and appear only distinctly in the red-brown areas; the bases of both wings are invariably covered by the light ground-colour. Forewing above black with a large or small orange anal-marginal spot. Hindwing above orange, at the base more or less black. — **leonina**

*paradoxa*.

*E. Sharpe* (70 a). Both wings beneath with a coherent, about 2 mm broad, orange or red-brown marginal band. ♂. Anal-marginal spot of forewing above very small or streak-shaped. ♀. The anal-marginal spot of the forewing is situate behind the middle and reaches vein 4 or 5. Sierra Leone and Togo. — **paradoxa** *Schultze*.

*bitje*.

The orange-red marginal band of the under surface is well developed on the forewing only in the areas 1 b to 3, otherwise absent or only indicated by small spots, and is entirely absent on the hindwing at the middle of the margin; the red-brown discal area of the forewing extends from vein 2 to the costal margin and covers the apex of the cell and the bases of the areas 2 to 6, 8 and 9; the red-brown discal area of the hindwing extends from the costal margin to the proximal margin forming a broad transverse band which is very much widened at the proximal margin. Forewing of the ♂ above as in the principal form. North West Cameroon. — **bitje** *H. Druce* deviates from the two other races by the dark marginal bands beneath being entirely absent. Forewing above in the ♂ with a large orange anal-marginal spot reaching the discal cell. Cameroon near Bitje on the Ja-River.

#### 14. Genus: **Chloreselas** *Btlr.*

*Chloroselas* closely approaches the genus *Spindasis* and only differs by the first subcostal vein of the forewing (vein 11) joining the costal soon after its rise. It may therefore be easily overlooked. The eyes are bare.

Wings above in the ♀ blackish-brown changing to coppery brown with an orange spot at the anal angle of the hindwing, in the ♂ with a reflecting blue anal-marginal spot of the forewing, and the greatest part of the hindwing blue; forewing besides in the ♂ at the end of the discal cell with a black mealy spot or transverse band. The orange anal spot of the hindwing as in the ♀. Under surface greyish-yellow changing to reddish with black, metallic-pupilled spots.

The small species are little known and have hitherto only been met with in South and East Africa. The differences between the species are still very uncertain and are besides doubtful owing to the figures given by BUTLER and TRIMEN not agreeing with the descriptions.

#### Review of the Species.

I. Hindwing only with one short small tail (at vein 1 b).

*Ch. tamaniba*.

II. Hindwing with two short small tails, one at 1 b and one at 2.

*Ch. pseudozeritis*.

*tamaniba*.

**Ch. tamaniba** *Wlk.* The short description of this species says: „Bronze-brown; forewing in a certain light blue at the base and in the posterior half; hindwing blue with a narrow brown marginal band; an orange spot adjoining to the small tail in which it expands, is distally bordered with a lustrous steel-blue; under surface reddish-grey with lustrous metallic spots and a narrow submarginal band of the same colour; some of the spots towards the margin bordered with jet-black or accompanied by jet-black spots; some black spots between the submarginal band and the margin; fringes light grey, at the base black.“ Hor Tamaniba.

*esmeralda*.

— **esmeralda** *Btlr.* (69 g) was described much later, in 1886, according to specimens from the Somaliland, as follows: „Forewing above with the anal-marginal half as far as the base though except the costal margin lustrous emerald green, in a certain light with a purple lustre and in another light with a reddish reflection; the basal half of the costal margin invariably of this colouring; apical half smoky brown: a



black spot at the end of the discal cell" (in the figure the forewing above is blackish with a triangular, greenish-blue anal-marginal spot covering the base of the areas 1 a to 3, but not penetrating into the cell). „Hindwing lustrous green with a broad smoke-brown costal margin and light bronze-brown proximal margin; anal lobe golden orange, on each side spotted black and silvery white. Body above blackish-blue; head whitish; palpi white; antennae and abdomen with white ringlets; antennal club with an orange apex. Wings beneath light loamy yellow, everywhere decorated with black spots pupilled silvery white; forewing at the anal margin whitish; a silvery spot near the base of the costal margin, about 6 such spots in the discal cell, an irregular transverse row of such spots behind the cell and two more such transverse rows before the margin; fringes white; hindwing with 4 or 5 basal dots, a transverse row of 4 spots with fine black streaks in the first third and a discal transverse row of silvery spots being mixed with 6 black dots; the submarginal rows as on the forewing. Anal lobe as above; body beneath white. Expanse of wings: 21 to 22 mm." BUTLER in a later work mentions as its particular difference from *tamaniba* its smaller size. But as it is a well-known fact that in such countries as the Somaliland the size depends on the atmospheric condition during the development, this difference alone seems to me not to be decisive, and I consider *esmeralda* to be probably only a small form of *tamaniba*. Somaliland.

**Ch. pseudozeritis** *Trim.* (70 a) was discovered in Eastern Cape Colony in the Bathurst District by Miss FANNY BOWKER and was denominated owing to the marking beneath being very similar to that of *Phasis* („*Zeritis*" *Trim.*). In the ♂ the wings above are blackish-brown and blue; on the forewing the blue colour forms an anal-marginal spot covering the base of the areas 1 a and 1 b, only slightly traversing the middle of the anal margin and the vein 2 and scarcely penetrating into the cell. Hindwing above bright blue, at the costal margin broad black (as far as vein 6), at the proximal and distal margins narrow black; at the anal angle with an orange spot enclosing two black marginal dots, and being proximally decorated with some bronze-coloured scales. Under surface dull, light greyish-yellow, with dark, angular spots with metallic pupils. Fringes of the wings uni-coloured whitish. ♀ above brown. Cape Colony, Natal, Transvaal. — **azurea** *Btlr.* seems to deviate by the blue anal-marginal spot on the ♂ forewing above extending almost to the margin without passing into the area 2 and the cell. The ♀ differs from the ♂ by the absence of the blue colour above; the wings are therefore above uni-coloured dark coppery-brown with an orange anal spot of the hindwing British East Africa. *pseudozeritis.*  
*azurea.*

### 15. Genus: **Zeritis** (*Bsd.*) *Auriv.*

The name *Zeritis* was at first applied by the well-known French lepidopterologist BOISDUVAL in 1836 in the first volume of his „Species Générales des Lépidoptères". He did not, however, supply a description of the genus, but figured a species (*neriene*) as the typical one and also added a figure of the veins. This figure could therefore, if we are not too strict, be regarded as the characterization of the genus. Unfortunately, however, the design of their veins is wrong and does not fit the genus. And besides also the figure of *neriene* is not correct, as the two small tails of the hindwing by which the genus is distinguished are absent altogether. The figure was probably done according to a damaged specimen. The marks communicated by BOISDUVAL are thus not conclusive for this genus. Whether BOISDUVAL is nevertheless to be regarded as the author of the genus others may decide. But in order to avoid unnecessary changes of names I have used BOISDUVAL's name.

Antennal club very long, longer than half the shaft, not very distinctly defined. Palpi short; the last joint porrect, cylindrical, almost bare. Eyes bare. Veins of forewing: 10. Hindwing with two equally long, small tails as thin as a hair, one of which rises at the end of vein 1 b, the other at the end of vein 2. Veins 6 and 7 of forewing at their base more or less united. The wings are beneath very variegated with transverse rows of quadrangular, yellow spots.

The genus entirely corresponds with *Axiocerses* in the structure of the veins, but it differs from it and from the other allied genera by the two small tails of the hindwing.

Only three species all of which are rare and little known were hitherto described. The sexual differences are unknown to me.

#### Review of the Species.

A. Wings above and beneath with black submarginal dots or small streaks in the areas 1 to 6. Wings above orange with black markings or at least in the marginal half with large, reddish-yellow, more or less contiguous spots and with a reddish-yellow marginal band.

\*. Both wings beneath with distinct, mostly quadrangular spots bordered with black.

α. Both wings above at the base broad blackish-brown with or without small reddish-yellow spots or dots. *Z. neriene.*



β. Both wings also in the basal half of a bright orange with small black spots or dots. *Z. aurivillii*.

\*\* Both wings beneath monotonously bright orange with separate black streaks or small spots.

*Z. pulcherrima*.

B. Wings without dark submarginal dots in the yellow marginal band. Wings above far beyond the middle blackish-brown with or without small reddish-yellow discal spots; before the fine black marginal line with a reddish-yellow marginal band consisting of quadrangular spots only separated by the black veins.

*Z. sorhageni*.

*neriene*. **Z. *neriene*** Bsd. (70 a) was never described and only figured from beneath by BOISDUVAL. But on inserting the species in my work „Rhopalocera Aethiopica“ I had before me also a figure of the only typical specimen from above, which was most kindly communicated to me by Mr. CHARLES OBERTHÜR in Rennes who owns BOISDUVAL's collection, and was reproduced here. The small tails of the hindwing are absent. I do not, however, dare to decide whether they are in fact absent in *neriene*. Instead of a description made according to the figure it suffices to refer to the figure. The extent of the black markings above seems to be somewhat variable. Guinea, Rhodesia. — **amine** Btlr. (69 h) I have formerly considered as a synonym of *neriene*. But as both BUTLER (An. Mag. Nat. Hist. [7] 8 p. 58, 1901) and DRUCE (Trans. Ent. Soc. London 1905, p. 252) assert, though without mentioning differences, that *neriene* and *amine* are different, I shall for the present regard *amine* as a separate form. But that *amine* is very closely allied with *neriene* and can hardly be more than a form of it, seems to me to follow from the entirely homogeneous scheme of markings in both. If we take no account of the small tails, *amine* seems only to deviate by the greater extent of the black markings above and of the reddish-yellow ones beneath; this difference cannot be very essential, particularly since also in *neriene*, as was mentioned above, this extent is not invariable. Ashanti, Dahomey and Niger.

*aurivillii*. **Z. *aurivillii*** Schultze (70 a) is not before me; SCHULTZE describes it as follows: „Above: ground-colouring of a bright orange as in *neriene*, but the black markings much scantier than in *neriene*. Black are only: on the forewing two indistinct dots next to each other in the discal cell, the median band composed of rectangular spots (in 1 a, 2 and at the end of the discal cell), the discal band consisting of quite similar spots (in 1 b to 5), minute submarginal dots in 1 b to 6, and a very fine black marginal line. On the hindwing are only black: a blurred transverse spot at the end of the discal cell, rudiments of the discal band in area 5 and indistinct submarginal dots in areas 1 c to 7, and likewise a fine black marginal line. Beneath: ground-colour of a lustrous reddish Isabel-colour. Basal dots, median band and discal band complete; the submarginal dots of the forewing are expanded into small (proximally open) crescents, those of the hindwing at least more distinct than above. In *neriene* the bands are darker than the ground-colour, whereby at least the hindwings appear like a chess-board; in *aurivillii*, however, the spots are for the greatest part not differently coloured from the ground-colour, so that only the transverse streaks distally and proximally bordering on the spots stand out in bold relief, whereby the under surface looks striated. Transverse streaks and submarginal dots are orange with black and for the greatest part also dense silvery scaling. Spots of a similar colouring are on the forewing in areas 8 to 10. The small tails (as far as they are present) are black, the fringes grey.“ The only specimen, a ♂, was captured by SCHULTZE himself near Demssa in Adamaua, when it was flying around blossoming acacias; later on also met with in South Cameroon.

*pulcherrima*. **Z. *pulcherrima*** Auriv. (69 h ?; without small tails!). Frons whitish with some black dots and bristles. Palpi white; the last joint above black; chest, legs, and ventrum whitish; dorsum blackish with a rust-coloured yellow collar; abdomen above and laterally reddish-yellow with a black dorsal line. Antennae black with fine white ringlets. Wings above of a bright reddish-yellow with black markings which are confluent at the base and at the costal margin of the hindwing as in *neriene*. Forewing above in the basal part as far as the apex of the discal cell black with a reddish-yellow spot in the discal cell near its apex; the black colour also covers the innermost base of the areas 2 to 5; costal margin as far as vein 10 black, at the base broadly scaled reddish-yellow; right behind the middle there is an irregular transverse row of large, angular, black discal spots in 1 b to 6; the discal spots 1 b to 3 are more or less united with the black basal part and thereby separate three reddish-yellow spots of the ground-colour; the discal spots 4 and 6 are situate more towards the margin than the others; a small black discal spot in area 7; then follows between the costal margin and vein 1 an almost straight black transverse line distally united with black submarginal dots or streaks of the areas 2 to 5 (to 6); a fine black marginal line thickened at the veins; fringes blackish-grey. Hindwing above at the base as far as the end of the discal cell and at the costal margin almost as far as the apex and vein 6 black; discal spots 1 to 6 oblong, sometimes narrow and separate, sometimes larger and united with each other,



that in area 5 united with the black costal-marginal band; parallel to the margin two antemarginal rows of small black dots; an extremely fine, black marginal line is absent in 1 c; fringes grey, partly yellowish; the small tails are black; that at the end of vein 1 b at the base yellow. Both wings beneath monotonously bright orange and decorated with separate black streaks and spots; they evidently correspond to the border-lines separating in *neriene* and *amine* the orange spots from the lighter ground-colour; on the forewing almost all the spots, on the hindwing only few spots are accompanied by silvery scales; the forewing has 5 transverse streaks in the discal cell and in the areas 4 and 5; 6 in area 2; 4 in area 3; three in 6, two punctiform ones each in 7 and 11, and one in area 10; in area 1 b there are a broad longitudinal stripe at the base, two large quadrangular spots in the centre and two smaller antemarginal transverse streaks; the hindwing is decorated with about 50 small, almost equally large, entirely separated black streaks (or dots); they form 7 or 8 partly irregular or incomplete transverse rows; only some of the basal streaks and all those of the first submarginal transverse row are decorated with silvery scales. The only specimen lying before me seems to be a ♀ (the forelegs are unfortunately not complete). East Sudan near Wau.

**Z. sorhageni** *Dewitz* (70 a) is easily recognizable by its dark upper surface and by the distinctly defined, *sorhageni*. unspotted, yellow marginal band. The species is not lying before me and I therefore copy DEWITZ' description. „Upper surface blackish-brown; the marginal line is accompanied by a row of yellow, small, almost quadrangular spots and before this there is another row of smaller, bluish-silvery spots; some few minute yellow spots or dots are scattered in the disc of both wings. The under surface looks variegated, mosaic-like by yellow and silvery small spots being intermixed in the blackish-brown ground-colour of the disc on both wings; regularly arranged are only the spots of the two rows accompanying the margin and occurring also above, the distal one of which is composed of yellow spots, the proximal one of silvery spots; the other yellow and silvery spots covering the disc on both wings are placed more irregularly. At vein 1 b of the hindwing there is a small black tail; another one at vein 2 is only partly preserved in the only specimen lying before me. Body black; abdomen beneath with yellow ringlets; head marked yellow; legs and antennae black; palpi yellow.“ Central Angola.

## 16. Genus: **Desmolycaena** *Trim.*

To the marks stated in the review of the genus on p. 377 we may merely add that the palpi are long and porrect. The shape of the wings is to be seen from the figure.

Only a single species of this genus has hitherto been described.

**D. mazoensis** *Trim.* (70 a). ♂. Wings above greyish-brown, everywhere with an intense light violet *mazoensis*. reflection. Both wings beneath brownish-grey, with numerous silvery and black dots or small spots, the arrangement of which is seen in the figure. The ♀ is unknown. The species was discovered by G. A. K. MARSHALL in the Mashuna Land.

## 17. Genus: **Axiocerses** *Hbn.*

Antennae with a long, cylindrical, gradually deposited club. Margin of forewing in the ♂ straighter and posteriorly distinctly emarginated, in the ♀ almost uniformly rounded off. Forewing only with 10 veins, veins 8 and 9 being absent; 6 and 7 forked, 10 and 11 separate from the costal margin of the discal cell. Hindwing at the anal angle with a broad though short lobe and a small tail at the end of vein 1 b; the proximal margin behind vein 1 a deeply emarginated; margin slightly undulate.

The forewing is above black or blackish with a larger or smaller, red or yellow uni-coloured or black-spotted anal-marginal spot. Hindwing above almost entirely or at least for the greatest part red or yellow with (♀) or without 1 or 2 postmedian transverse rows of dark spots. Beneath the wings are strewn with numerous small silvery or golden spots margined with dark. Costal margin of forewing beneath at the base coloured light. The spots of the wings are, if they are present, above invariably black, but beneath generally pupilled metallic; they normally occur in the following number: forewing: two basal spots in the discal cell and one each in 1 b and 2; a transverse streak at the end of the discal cell; one discal spot each in 1 b (doubly pupilled) 2 to 7 and 10, and two in 11; an almost straight row of 6 often strigiform submarginal spots. The hindwing has basal spots in 1 c, 2 and 7 and the discal cell (2); a transverse streak at the end of the discal cell; discal spots in 1 a to 7 and submarginal spots or streaks in 1 b to 7.

The sexes differ rather much by the shape of the wings and the colouring above.

### Review of the Species.

A. Forewing beneath in area 1 b without a long silvery longitudinal line. — ♂. The light colouring above not very dark, changing from red to reddish-yellow.



α. Forewing beneath with a double, light-pupilled discal spot somewhat behind the middle of area 1 b. Antennal shaft black with white ringlets. ♂. Forewing above at the base of the costal margin black or yellow.

\*. Hindwing above yellowish-red or red with a black base and a fine black marginal line (♂), or reddish-yellow with black markings (♀).

a. ♂. Margin of forewing at vein 4 distinctly prominent.

*A. harpax.*

b. ♂. Margin of forewing almost uniformly bent.

*A. bambana.*

\*\*.

*A. argenteomaculata.*

β. Forewing above and beneath without a discal spot in area 1 b or only with traces of such a spot. Antennal shaft often brown, with very fine white ringlets or only dotted white. ♂. Forewing above at the base of the costal margin broad orange.

\*. Forewing above at the costal margin, at the distal margin and generally also at the base broadly black or blackish. Hindwing above with a fine black marginal line.

a. Forewing beneath at the base of the costal margin only narrowly whitish-yellow with a row of silvery scales at the posterior margin of the yellow colour.

*A. mendeche.*

b. Forewing beneath at the base of the costal margin broadly scaled silvery white

*A. amanga.*

\*\*.

*A. baumi.*

B. Forewing beneath in area 1 b with a silvery longitudinal streak at the base and then with a long, silvery, slanting longitudinal line generally edged with black, which rises near the base of vein 2 and almost reaches vein 1 far behind its middle. — ♂. The light areas above are very dark hemochrome.

*A. punicea.*

*harpax.*

**A. harpax** *F.* (70 c). ♂. Forewing above black, at the base of the costal margin reddish-yellow and with a large yellowish-red anal-marginal spot reaching at least vein 5 and enclosing 1 to 5 separate or almost separate black spots (the discal spot in 1 b, the basal spots in 2 and the discal cell, and the transverse streak at the end of the cell); hindwing above yellowish-red, without spots, with a fine black marginal line and dark fringes, at the base narrowly covered with black. The under surface is darker or lighter violettish-brown, at the anal margin of the forewing broadly reddish-yellow; the spots are generally all present and show metallic pupils. In the ♀ the forewing above is only black at the base, at the costal margin as far as vein 7 and at the distal margin; the marginal band is 2 to 3 mm broad and posteriorly not or scarcely tapering off; the black discal spots in 1 b to 5 are all distinct and separate or almost separate, and so are the spots at the end of the discal cell; the submarginal spots, however, are covered by the marginal band; the hindwing differs from that of the ♂ by showing 2 distinct transverse rows of black spots (the discal spots and submarginal spots); beneath coloured and marked almost like in the ♂, but lighter. In the whole of Africa from Sierra Leone to the Cape Colony and East Africa. — **perion** *Cr.* represents a ♀ on the upper surface of which the discal spots of the forewing and the discal and submarginal spots of the hindwing are united into transverse bands. As the ♂ of this form I consider the specimens in which the red anal-marginal spot of the forewing is much smaller and narrower and therefore does not enclose any separate black spots. Among the typical form, but unknown to me from South Africa. — In **styx** *Rebel* the red anal-marginal spot of the forewing above is still smaller and reaches to vein 2 at most. German East Africa in the Magara Mountains near Zanzibar.

*perion.*

*styx.*

*bambana.*

**A. bambana** *Smith* (70 c) is unknown to me, but according to the figure it is very similar to the preceding species and only seems to differ by the bent margin of the forewing, the submarginal dots on the hindwing above, and a silvery line close before the margin of the hindwing beneath; the red anal-marginal spot of the forewing above is narrower than generally; similar specimens, however, are lying before me also of *perion*. East Africa: Moyabamba and Pugu.

*argenteomaculata.*

**A. argenteomaculata** *Pag.* The description says: „Antennae black with white ringlets; club reddish-brown; palpi and legs beneath whitish; ventrum whitish, chest and abdomen above brownish with red-brown scales; forewing above at the margin blackish, in the centre with a golden brown lustre; before the whitish, on the veins black fringes there is a blackish marginal band. Hindwing above brownish-black, with a golden brown reflection; at the end of the tail several small scales with a silvery blue lustre. Forewing beneath light brown with silvery white lustrous punctiform spots encircled by black, situate in a submarginal row and three irregular proximal rows; anal margin lighter yellow, the ground reddish-brown. Hindwing beneath light brown, suffused with blackish, with small, lustrous silvery spots situate in a submarginal and discal row; at the anal appendage margined with black and fringed with black there are some red-brown scales; fringes whitish, on the veins blackish.“ Expanse of wings: 20 mm. Abyssinia near Burka.

**A. mendeche** only differs from *amanga* by the marks mentioned in the review and is perhaps only a form of it. The spots or streaks on the hindwing beneath are very indistinct or united into fine dark transverse



lines and not pupilled white; such specimens, however, also occur in *amanga*. — *mendeche* *Smith* (70 c) has a median band on the forewing above being about 7 mm broad at the anal margin, and two similarly coloured spots in the discal cell; the band is yellowish-red in the ♂, anteriorly bordered by vein 5 and there about 4 mm broad, in the ♀ it reaches vein 7, being almost equally broad as far as vein 6 and of a reddish-yellow colour. British East Africa near Mombasa, but probably also in other parts of East and South Africa, although it was hitherto mixed up with *amanga*. — ab. ♂ *bistrigata* ab. nov. Forewing above in the areas 2 and 3 in the red colour with separate or almost separate black discal streaks which are entirely absent in the type. Matabeleland and German East Africa. — *borealis* *Auriv.* only deviates from the type by the median band of the forewing above being narrower (in the ♂ at the anal margin about 4 mm and at vein 4 only about 2½ mm broad), and by the light spots of the discal cell being quite absent (♂) or only indicated (♀). Discovered by SCHULTZE in Adamaua.

**A. *amanga*** *Westw.* (70 b, c) is distinguished by the very broad base of the costal margin being almost in its whole width scaled silvery white, in the forewing beneath. Like in the other species, particularly in the ♂ the width and length of the red anal-marginal spot on the forewing above is very variable; in one ♂ (from the Mashuna Land) it is almost equally broad and reaches vein 6, in another from Daressalam it is reduced to a streak in 1 a and a small spot in 1 b; in the other specimens it is of an intermediate size between the said extremes. Forewing above at the base of the costal margin broadly orange. German South West Africa, Matabele Land, Natal, Transvaal, Mashuna Land, Nyassa Land, German and British East Africa.

**A. *baumi*** *Weym.* is unknown to me, but as WEYMER himself asserts, closely allied with *amanga*. To the marks mentioned in the review of the species the following may be added: on the forewing above the dark bordering at the costal margin is in the middle about 1 mm broad, at the apex 2 mm, at the distal margin below the apex only 1½ mm, and gradually tapers off towards the anal angle where it terminates into a fine point; across the terminal vein of the discal cell extends a fine, brown, posteriorly tapering streak anteriorly coherent with the dark costal margin; at the base of the anal margin there is some black dusting, but only 1½ mm broad; the brown colour of the margin is in some places intermixed with red scales, whereas brown scales extend from the margin along the veins proximally. The base of the hindwing above is dusted with brown in a width of about 1 mm. Angola.

**A. *punicea*** *Smith* (70 b, c) is at once discernible from all the other species by the silvery longitudinal stripe in area 1 b on the forewing beneath. ♂. Wings above jet-black; forewing at the base of the costal margin yellowish-red and with a dark hemochrome anal-marginal spot sometimes reaching to vein 6, sometimes only to vein 3; hindwing with a large hemochrome area covering the anal region and the posterior margin as far as the apex of vein 1 a, expanding anteriorly as far as vein 5 or 6, and proximally reaching to the apex of the discal cell; under surface red-brown, with a violet reflection and with spots pupilled silvery white. In the ♀ the wings above are pale ochreous with a broad blackish marginal band of the forewing and generally also of the hindwing; discal cell of forewing and costal margin of hindwing also more or less darkened; under surface marked like in the ♂, but of a lighter yellowish ground-colour. Manica Land; German and British East Africa.

## 18. Genus: **Leptomyrina** *Btlr.*

Antennal shaft thin, filiform with long joints; club distinctly defined, short, more or less compressed. Palpi long, porrect or a little bent up; the first and second joints below bristly; third joint long, ending in a sharp point, thinly covered with appressed scales. Eyes bare. Forewing with 10 veins (8 and 9 being absent); vein 5 from the middle of the transverse vein; 6 and 7 from the same place, the apex of the discal cell; 7 terminating into the apex; 10 and 11 separate from the costal margin of the discal cell. The hindwings as usually have 8 veins and are at the anal angle either sharply angled or lobate and tailed.

The species are distinguished by both wings above showing at the anal angle one or two black, light-ringed ocelli.

### Review of the Species.

A. Hindwing at the anal angle long extended, *lobate*, and with a long tail at the end of 1 b. Hindwing beneath with distinct transverse markings and with two black ocelli proximally bordered with yellow, one of which is on the anal lobe in 1 b and the other at the margin in area 2.

α. Wings above light bluish-grey; the apical third of the forewing and 2 or 3 undulate submarginal lines blackish. *L. phidias.*

β. Wings above blackish-grey or dark brownish-grey; hindwing at the margin with whitish rings and before them with a whitish, undulate, interrupted transverse line.

\*. Ground-colour beneath whitish or whitish-grey.

*L. hirundo.*

\*\*. Ground-colour beneath stone-grey.

*L. makala.*



B. Hindwing at the anal angle somewhat extended and more or less sharply angled, but neither with a small tail nor an anal lobe. Hindwing beneath grey, speckled with black and brown, without distinct markings and without black marginal spots. — *Gonatomyrina sub. nov.* — Wings above with a coppery brown ground-colour. *L. lara.*

*phidias.*

**L. phidias** *F.* (70 b). Forewing on both surfaces with a black, white-ringed eyespot in 1 b at the anal angle; hindwing above with jet-black, white-ringed marginal spots in 1 c and 2, and a dark spot on the anal lobe, beneath the spot in 1 c is almost entirely covered with bluish scales, the spot in 2 being proximally bordered with yellow and the distally white anal lobe is proximally black with some yellow and bluish scales. Wings beneath light grey with dark grey markings surrounded by whitish; these markings consist on the forewing of a transverse streak at the end of the discal cell and discal streaks or dots in 1 b to 7 and 10, a postdiscal line composed of bows, and rounded marginal spots of which only that in 1 b is jet-black and distinct. Hindwing with a basal dot in 7, a transverse streak at the cell-end, an irregular discal line, a postdiscal line and marginal spots of which those in the areas 3 to 6 are scarcely darker than the ground-colour. The ♀ is somewhat larger than the ♂, but otherwise it hardly differs from it. Madagascar.

*hirundo.*

**L. hirundo** *Wallengr.* (70 b). Wings above blackish with a faint violet or bluish reflection (♂), or brownish-grey without a reflection (♀); forewing with a black marginal spot in 1 b surrounded by bluish (♂) or whitish (♀), hindwing with 2 such spots in 1 c and 2, and besides also with a black spot dusted with greyish-yellow on the anal lobe. Both wings beneath whitish with the very same markings as in *phidias*, but the discal spots often in the ♂ yellowish; forewing with a yellowish, hindwing with a blackish marginal line. Cape Colony, Caffraria, Natal, Delagoa Bay, and British East Africa.

*makala.*

**L. makala** *Baker* must, according to the description, be very closely allied with *hirundo* and seems only to differ by the darker under surface. The description of BETHUNE-BAKER runs as follows: „Both wings dark brownish-grey; forewing with one or two eyespots at the anal angle, the pupil being blackish, the ring cream-coloured; hindwing with two such spots at the anal angle and before them with a marginal line on each side bordered by a fine, yellowish-white line interrupted at the veins; another whitish, likewise interrupted line nearer at the discal cell. Beneath soft stone-coloured grey; on the forewing the discal cell is closed by a light brown transverse streak filled up with white, above it and somewhat outside of it two small brown costal dots; discal band brown bordered with white, bent in the opposite direction to the discal line, at the anal angle with a black spot; hindwing with a light brown, white-pupilled transverse streak at the end of the discal cell; before it behind the costal vein (vein 12) and nearer at the base a double spot; another punctiform spot almost at the middle of the costal margin; at the proximal margin a spot behind the transverse streak of the cell; a very irregular discal line („postmedial“ line) is very much interrupted behind vein 4; the submarginal line is little interrupted and bent outwards, distally to it another indistinct line; a black spot between the veins 2 and 3, and another one on the anal lobe, both towards the base bordered with orange; a long, small brown tail bordered with white. Expanse of wings: 29 to 31 mm.“ Congo District near Makala.

*boschi.*

**L. boschi** *Strand* (70 b). STRAND himself believes that it is closely allied with *makala*, but in the description he only compares it with *lara* which belongs to a different division of the genus from *hirundo* and *makala*, and only mentions that it differs from *makala* by the presence of two eyespots in the anal angle of the forewing beneath. The description says: „Compared with *L. lara* *L.* above all the colouring above is different, being light ash-grey with a slight brownish hue in the marginal area and traces of a greenish tint in the basal area. The marginal area of the forewing shows, as in *lara*, two black ocelli posteriorly, but they are almost equally large, whereas in *lara* the anterior one is by far smaller, besides there is a third ocellus traceable by the presence of a white ring. In the marginal area of the hindwing there are only two jet-black ocelli, but by the presence of white rings, 4 or 5 more ocelli are indicated; this whole row of ocelli is proximally bordered by a band composed of dark coherent crescents. Marginal line on both wings black, fringes whitish. On the u n d e r s u r f a c e the forewings are lighter than in *lara*, the hindwings almost like in that species; forewing with a transverse discocellular spot encircled by a lighter shade, and opposite to it at the costal margin there is a dark dot and between this and the postmedian transverse band there is another punctiform spot ringed with light; this transverse band consists of 6 dark, distinctly white-edged, coherent spots and is almost straight, at the anal angle there are two black spots as above and 4 more dark light-edged spots are to be seen in front, this row being proximally bordered by brown crescents. The marginal area of the hindwing shows an indistinct sublimbal band which is midway expanded by dark dusting, and a small jet-black spot in the



anal angle, besides the anterior black spot shows through from above; a postmedian band of brownish spots reaches neither to the costal margin nor to the anal margin, it is almost straight, but midway distinctly interrupted; at about the middle of the proximal margin there is an oblique transverse spot, opposite to it at the costal margin there is a transverse spot in a vertical direction to the costal margin, and behind this a double, transverse, discal spot; the basal area is distally bordered by a bent row of 4 or 5 small dark transverse spots all of which are distinctly separated from each other, the anterior one the most distinctly so. Expanse of wings: 29 mm." Abyssinia.

**L. lara** *L.* (70 b) by the formation of the anal angle of the hindwing so considerably deviates from *lura*, the other exactly known species that it may be considered as the type of a separate subordinate genus (see above). In the scheme of markings, however, it is rather much like the other species, except the markings on the hindwing beneath being quite indistinct and hazy. Wings above coffee-brown with a slight lustre and at the base with a mother-of-pearl lustre, both at the margin with two jet-black eyespots curled white in the areas 1 b (resp. 1 c) and 2 and sometimes also with such a spot in area 3 (= ab. **gorgias** *Stoll*); hindwing sometimes within the eyespots with traces of a whitish transverse line; fringes white, at the ends of the veins spotted dark. Wings beneath whitish-grey, forewing sometimes brownish; forewing with the same markings as the other species and 2 or 3 black eyespots in 1 b, 2 (and 3); hindwing darker, grey, speckled with brown and black, cloudy without distinct markings and without black marginal spots. South and East Africa from the Cape Colony to Kavirondo and Abyssinia. *gorgias*.

### 19. Genus: **Capys** *Hew.*

Antennae moderately thick with a long, distinct, circular club. Palpi with appressed scales and a thin, pointed terminal joint. Eyes densely haired. Forewing with 11 veins (vein 9 being absent) and an almost straight (♂) or bent (♀) margin. Hindwing at the end of vein 1 b with a short and obtuse tail, and without a tail at vein 2; the margin of it undulate or dentate.

By the hairy eyes and the arrangement of the veins this genus agrees with *Deudorix*, but it differs from it not only by the absence of the small tail at vein 2 on the hindwing but also by the hindwing being tailed at vein 1 b and not lobate. I do not consider *Capys* to be closely allied with *Deudorix* in spite of the external resemblance of the upper surface with some species of that genus.

The ♂♂ on the hindwing above generally exhibit a small, lustrous, light grey mealy spot across the base of the veins 6 and 7, but no hair-pencil at the posterior margin of the forewing.

The wings are beneath of a grey ground-colour; no basal spots: the marking consists of a transverse spot at the end of the discal cell, of a transverse row of discal spots being almost straight on the forewing, irregular on the hindwing, and of indistinct submarginal or marginal spots: the spots are bordered or curled with black or reddish.

#### Review of the Species.

I. Wings above not uni-coloured blackish-brown. ♂. Hindwing above at the rise of veins 6 and 7 with a distinct mealy spot.

A. Both sexes above with a black ground-colour and in the centre of the wings with a large orange-red area. Fringes white at the ends of the veins and at the base blackish. *C. alphaeus*.

B. Fringes white with a red basal line. ♂. Wings above blackish-brown, in the centre very broadly, sometimes almost entirely orange-red. ♀. Wings above dark grey with a violet-bluish hue, in the centre somewhat lighter but without red; hindwing above at the margin with red moon-spots. *C. disjunctus*.

II. Wings above uni-coloured blackish-brown. ♂. Hindwing without a mealy spot. *C. brunneus*.

**C. alphaeus** *Cr.* (70 d). The red discal area above on the forewing broad, more or less rounded off, often touching the anal margin and covering the centre of area 1 b, the base of the areas 2 to 5, and the apex of the discal cell, whilst on the hindwing it is longer and narrower. Forewing in both sexes beneath with a large orange anal-marginal spot covering the base of the areas 1 a to 3 and the posterior longitudinal half of the discal cell and almost entirely crowding out the discal spots in the areas 1 a to 3; the discal spots 6 and 7 of the hindwing very broad and coherent with the transverse spot at the cell-end; both wings beneath at the margin more or less broadly darkened. Cape Colony, Natal, Transvaal. *alphaeus*.

**C. disjunctus** *Trim.* (70 d). The ♂ differs from that of *alphaeus* by the red areas above being more extensive, almost reaching to the base on the forewing and covering nearly the whole discal cell, on the hindwing leaving free only a narrow, anteriorly somewhat broader dark marginal band and the black proximal margin; the discal spots beneath are more indistinct. The ♀, as we have seen in the description in the review of the *disjunctus*.

species, is above quite different from the ♂ and from the ♀ of *C. alphaeus*; the under surface is paler than in the ♂ with distinctly prominent discal spots which are also on the forewing completely developed as far as area 1 b; the yellow anal-marginal area is very pale or only traceable. J. F. LEIGH found the larva in Natal in the fruits of *Protea hirta*; the eggs are deposited on the immature fruits; the larva in its juvenile stage is almost black, gradually turning lighter, and in its adult stage being coloured almost like the larva of *Cossus ligniperda*, boring its way into the fruit where it also pupates after having made an aperture in the wood-like wall of the fruit; pupa brown; the larvae are visited and licked by small ants. Natal, Transvaal, and Mashuna Land. — **connexivus** Btlr. (70 g) only differs by the ♂ showing the red colour above less expansive and extending on the forewing not to the base, on the hindwing not to the costal margin. The ♀ hardly differs from that of the type, but according to BUTLER the ground-colour above is more lavender-coloured. Nyassa Land. — **bamendanus** Schultze was discovered by Lieutenant A. SCHULTZE near Bami in the grass-land of Central Cameroon, and is distinguished by the ♂ above showing the forewing coloured and marked like in the type, but the hindwing like in *connexivus*. The discovery of this species, that had hitherto only been known from South Africa, in the hinter-land of Cameroon is geographically most interesting.

*brunneus.* **C. brunneus** Auriv. ♂. Shape of wings and anterior feet as in the ♂ of *connexivus*; hindwing, however, without a mealy spot at the rise of the veins 6 and 7; both wings above uni-coloured dark blackish-brown with a faint violet or a somewhat coppery reflection; forewing behind the discal cell in area 4 indistinctly scaled reddish; fringes whitish with a distinctly prominent red basal line; under surface as in *connexivus*, but with indistinct markings. Expanse of wings: 26 mm. German East Africa: Kigonsera.

## 20. Genus: **Phasis** Hbn.

Antennae rather thick; antennal shaft with short joints; club cylindrical, gradually deposited. Palpi long, porrect, with a thin, pointed terminal joint, beneath either bristly or only coarsely scaled. Forewing generally with 12 veins, vein 7 in this case always terminating into the margin; if there are only 11 veins, vein 9 is absent and vein 8 is sometimes very short, vein 7 terminating into the apex of the wing; vein 6 rises separately from the apex of the discal cell; hindwing at the margin dentate or undulate, rarely entire-margined; at the anal angle usually sharply angled or with a short tail without an anal lobe, rarely rounded off.

The wings above are almost invariably orange with black markings or black with orange or yellow markings, rarely quite blackish or silvery grey. Forewing in all the species beneath with the same marking consisting of the following black or dark spots often filled up with white: 2 successive dots or spots in the discal cell, a transverse spot at the end of the discal cell, a basal spot in area 1 b; an irregular transverse row of 6 or 7 discal spots in 1 b to 6 and 9, a dark postdiscal band or transverse row of spots, and dark submarginal streaks or spots; the latter two markings, however, are often indistinct or absent. The hindwings are very differently marked in the different species and sometimes without any spots; if the marking is distinctly prominent there, it consists of the following spots usually filled up with white or lustrous silvery: one basal spot each in 1 a, 7 and 8, two basal spots in 1 b and in the cell; a transverse spot at the cell-end; an irregular bow of 8 discal spots (in 1 b, 1 c, 2 to 7), an almost uniformly bent or almost straight row of 8 post-discal spots in 1 b to 7, and finally of 5 or 6 submarginal or marginal spots. The black bordering of the spots of the hindwing is sometimes entirely absent; the spots appear then as white or silvery spots.

The numerous species may be divided into 3 groups of species or subordinate genera.

### Review of the Groups of Species.

- A. Hindwing with two small tails, one at the end of vein 1 b, and one at the end of vein 2. Forewing with 12 veins, vein 7 terminating into the margin. — *Phasis* Hbn. s. str. First group of species.
- B. Hindwing at the end of vein 1 b angular or tailed, at vein 2 always without the small tail.
  - α. Forewing above without the black discal band or separate black discal spots, always with 12 veins; vein 7 terminates into the margin. Palpi below coarsely scaled without bristly hairs. — *Aloeides* Hbn. Second group of species.
  - β. Forewing and often also the hindwing above with black discal spots on a light (orange) ground, or the forewing above with a coherent black discal band being only united with the black marginal band in area 1 b and at the costal margin. — *Poecilmitis* Btlr. and *Chrysoritis* Btlr. Third group of species.



### First Group of Species.

This group only comprises two large species varying rather much from each other. The first species is entirely isolated and does not exhibit any close resemblance to the other species of the genus. The second species evidently approximates the species of the following group. Fringes white with large black spots at the ends of the veins.

#### Review of the Species.

A. Wings above blackish-brown, at the base covered with orange; forewing with large orange-red spots in the centre; hindwing with a row of 1 to 4 red submarginal spots in 1 b to 4. Anterior tibiae unarmed.

*Ph. thero.*

B. Wings above orange or reddish yellow without spots, with a broad black marginal band expanding towards the apex of the forewing and tapering off towards the anal angle of the hindwing. Anterior tibiae with a small spine at the apex.

*Ph. argyraspis.*

**Ph. thero** L. (70 d, e). Of the orange spots on the forewing above one is situated in the discal cell, one at the end of it, one in area 1 b before the middle, and five discal spots in the areas 2 to 6; these spots are sometimes separate (♂), sometimes more or less completely united to a band (♀). Forewing beneath orange, at the costal margin as far as the discal cell, and at the distal margin very broadly grey or brownish-grey, in the centre with several black spots pupilled silvery white. Hindwing beneath greyish-brown or brown with several irregular silvery spots. The small tail at vein 2 is sometimes very short. This species having already been described by LINNÉ is only known from Cape Colony and prefers dry, sandy districts.

**Ph. argyraspis** Trim. (70 e). Forewing beneath orange, at the posterior margin in 1 a and 1 b broadly light yellow, the marginal band almost the same as above, but decorated with silvery spots; the base of the costal margin and all the spots present, except the large black submarginal spots of the areas 1 b to 3, silvery white with or without fine dark rings; the basal spot in 1 b and the discal spots in 1 b to 3 are usually absent; the apex as far as the discal spots 4, 5 and 9 and a narrow marginal band brownish-grey. Hindwing beneath dark greyish-brown with large, separate, angular, silvery basal, discal and submarginal spots. Cape Colony.

### Second Group of Species.

All the species of this group agree in the structure of the veins and are evidently closely allied to each other. Anterior tibiae in all the species I examined armed with a spine at the apex. The separation of the closely allied species is still uncertain and the review of the species consequently to be regarded as provisional. — The divisions B  $\alpha$  and B  $\beta$  are not sharply separated.

#### Review of the Species.

I. Margin and fringes of hindwing angular or at least undulate. Hindwing at the anal angle distinctly angular or with a short tail. Wings above yellow with black markings, or black or blackish, with or without light spots or areas.

A. Fringes of the wings on both surfaces with very distinct white spots which are beneath generally proximally prolonged like streaks. Hindwing beneath with numerous white or lustrous silvery spots.

$\alpha$ . Hindwing at the anal angle distinctly extended, above at the base not or but little darkened.

*Ph. wallengreni.*

$\beta$ . Forewing above at the costal margin olive-grey. A smaller species. Hindwing at the anal angle almost entirely rounded, above in the basal part broadly darkened.

*Ph. malagrida.*

B. Fringes of wings at least beneath without distinct white spots.

$\alpha$ . Forewing above at least in the basal third from the costal margin to the posterior margin uni-coloured yellow or reddish-yellow. The yellow colour above is on both wings very extensive and generally leaves only a dark marginal band and costal spot. The spots on the hindwing beneath are usually separated, rounded and small.

\*. Hindwing beneath with a bright violettish-red or rosy-red ground-colour, at the anal angle distinctly extended.

*Ph. aranda.*

\*\*.

§. Forewing above as far as the posterior angle with a black marginal band or at least with black marginal or submarginal spots.

- o. The discal and postdiscal spots on the hindwing beneath are situate close together and almost form parallel arcuate rows. Costal spot of hindwing above posteriorly extended. Fringes of the wings above with distinct light spots. *Ph. molomo.*
- oo. The discal spots on the hindwing beneath as usually form a very irregular row not being parallel to the postdiscal spots. Costal spot of hindwing above transverse or absent.
  - 1. Discal spots of hindwing beneath filled up with whitish. Fringes of the wings broad, above spotted light. *Ph. damarensis.*
  - 2. Discal spots of hindwing beneath small and black. Fringes of the wings above without distinct light spots. *Ph. marshalli.*
- §§. Both wings above only with a fine dark marginal line which is only expanded at the apex of the forewing. Ground-colour beneath light greyish-brown with discal spots filled up with whitish. *Ph. simplex.*
- β. Forewing above with a broad dark costal-marginal band reaching to the base or at least to the basal third, or entirely blackish. ♂. Forewing almost triangular with an almost straight margin. ♀. Forewing longer and obtuser with a very much bent margin.
  - \*. Basal half of hindwing above at least in the areas 1 c to 3 or 4 and 5 yellow or reddish-yellow. Forewing above very extensively yellow or reddish-yellow.
    - §. Discal spots of hindwing beneath at least between the veins 1 a and 5 united into a broad whitish-grey transverse line. *Ph. thyra.*
    - §§. Discal spots of hindwing separated though contiguous. *Ph. almeida.*
  - \*\*.
- Hindwing above at least beyond the middle blackish-grey or blackish. Forewing above quite black or only with a yellow or whitish discal area or postdiscal band.
  - §. Hindwing beneath of a bright rosy-red ground-colour and separate or almost separate, light, sometimes indistinct discal spots. *Ph. conradsi.*
  - §§. Hindwing beneath with a grey, yellowish, or brownish (never red) ground-colour.
    - 1. The postdiscal spots of the forewing beneath uni-coloured black. Forewing above with or without a yellow spot in the centre [in (1 b) 2, 3 (4)]. Hindwing above invariably with a large orange spot at the margin in the areas 1 c to 3 (to 5) and with black marginal dots between the veins. *Ph. pierus.*
    - 2. The postdiscal spots of the forewing beneath at least in 1 b to 3 with a silvery dot. Comp. here also *Ph. damarensis* var. — ♂. Forewing above without markings or with a whitish subapical band, or in the centre feebly lighter yellowish; hindwing above uni-coloured without markings or with a dentate whitish or yellowish submarginal line. In the ♀ the forewing generally exhibits a light (whitish or reddish-yellow) postdiscal band and the hindwing a similar marginal band or line enclosing black marginal dots.
      - a. ♂. Hindwing above with a yellowish submarginal band. ♀. Hindwing above with a broad orange marginal band enclosing separate black marginal dots. *Ph. taikosama.*
      - b. ♂. Hindwing above uni-coloured blackish without markings or only with a dentate grey, indistinct submarginal line. ♀. Hindwing above with a dentate, yellowish submarginal line. *Ph. orthrus.*
- II. Margin and fringes of hindwing margined all round. Hindwing at the anal angle fully rounded without an angle or lobe. Wings above with a bluish-white ground-colour. *Ph. barklyi.*

*wallengreni.*

**Ph. wallengreni** *Trim.* Forewing above black, at the costal margin almost to the apex orange-yellow and with a large similar one of the posterior margin covering the base of the areas 1 b to 4 and the posterior longitudinal half of the discal cell; the black colour thus forms a broad, midway narrowed marginal band, and between the costal margin and the spot of the posterior margin it proceeds as far as the base like a proximally pointed longitudinal stripe; hindwing above orange with a black marginal band which is very broad (about 5 mm) at the costal margin and, behind vein 4, rapidly tapers off into a marginal line; the base is darkened in a width of about 3 mm; on the under surface the hindwing as well as the apex and marginal band of the forewing are yellowish or reddish brown with numerous silvery spots. The ♀ is lighter and otherwise differs above by the yellow spot of the posterior margin of the forewing being continued as a narrow submarginal stripe as far as vein 6 or 7, and by the yellow colour of the forewing being divided by a dark postdiscal nebulous band into a discal and a submarginal part. Cape Colony.



**Ph. malagrida** Wallengr. is similar to the preceding, but somewhat smaller and particularly different *malagrida*. by both wings above being blackish-grey as far as the centre; the orange colour therefore on the forewing merely forms a discal spot covering the proximal halves of the areas 2 and 3, and on the hindwing a submarginal band in 1 e to 4; the spots beneath are rather white than silvery; the discal band on the hindwing beneath is serpentine, narrow and coherent. Cape Colony to Transvaal.

**Ph. aranda** Wallengr. (70 f, g). Wings above light orange, at the base slightly or scarcely darkened; *aranda*. forewing with an equally broad (about 2 mm) black marginal band and a triangular costal-marginal spot which is more or less coherent with it and reaches to vein 5 or 4; hindwing with a fine, black marginal line and a large, black costal-marginal spot. Cape Colony to Transvaal. — ab. **rougemonti** Oberth. only deviates by *rougemonti*. the costal-marginal spot of the forewing being streak-shaped and posteriorly defined by vein 6. Transvaal. — **zilka** Smith is another aberration exhibiting like *rougemonti* a narrow costal-marginal spot of the forewing *zilka*. posteriorly defined by vein 6 and being besides distinguished by the marginal band of the forewing being narrower and posteriorly tapering, and besides the costal-marginal spot of the hindwing is small or entirely absent; the ground-colour beneath is also less red, more brownish. Among the typical form: a specimen of this form also occurs among the typical specimens of WALLENGREN.

**Ph. marshalli** nov. spec. This new species is closely allied to *Ph. aranda* and only differs from it by *marshalli*. the marginal band of the forewing above ending at vein 2 and enclosing small, yellowish marginal spots at least in the areas 2 to 4, the ground-colour of the hindwing beneath being greyish-yellowish or reddish-yellow with black discal spots. The ground-colour above is light orange, and the hindwing only has a very fine, black marginal line and dark, distally yellowish fringes. The black costal-marginal spot of the forewing is sometimes narrow streak-shaped and defined by vein 6, sometimes more triangular and extended to vein 5 or 4, that of the hindwing small or entirely absent. Gaza Land, discovered and communicated to me by G. A. K. MARSHALL.

**Ph. simplex** Trim., with respect to the reduction of the black markings above is the extremest form *simplex*. of this group. Both wings above light orange with a fine black marginal line which is only somewhat broader at the apex of the forewing; hindwing and apex of forewing beneath light greyish-brown with whitish spots encircled by dark; discal spots of hindwing separate, not confluent as in *thyra*. Damara Land to Matabele Land.

**Ph. damarensis** Trim. (70 g) differs from the three species mentioned last by the broader, above distinctly *damarensis*. light (whitish) spotted fringes of the wings. Wings above as far as the base reddish-yellow with a black marginal band and a black costal-marginal spot which is at the costal margin more or less united with the marginal band; marginal band of forewing 2 to 3 mm broad, rather equally broad, but proximally often deeply indented at the veins; marginal band of the hindwing narrow linear or dissolved into dots; costal-marginal spot of the hindwing large and broad, square or transverse; rarely the whole costal-marginal half of the hindwing above is black (separate species?); forewing beneath in the centre more or less reddish-yellow; hindwing and the margins of the forewing lighter or darker brownish; the spots are separate and filled up with light, only the postdiscal spots of the hindwing are united into a dentate arcuate line. In dry districts of Central South Africa from the Damara Land to the Delagoa Bay. — ab. **punctata** ab. nov. (= *damarensis* Trim. var. 1904) differs *punctata*. above by the costal-marginal spots of both wings being absent and the marginal band only represented by small, separate, black dots; instead of the costal-marginal spot of the forewing there are two small submarginal dots (in 6 and 7); under surface like in the type. Kimberley.

**Ph. molomo** Trim. (70 f) is very much like the preceding species and only differs by the black marginal *molomo*. band of the forewing being broader, proximally almost entirely margined, and by the costal-marginal spot of the hindwing being narrower, posteriorly extended and therefore forming a shortened or almost complete submarginal band; the differences beneath have been mentioned in the review of the species. From Cape Colony to the north as far as Ovambo Land and to the east as far as Zambezi.

**Ph. thyra** L. (70 g). Wings above black; forewing with a large orange spot of the posterior margin, *thyra*. almost reaching to the base, in the ♂ anteriorly defined by vein 3 (or 4), but in the ♀ continued by two small spots of the areas 4 and 5; hindwing above with a large orange area covering the areas 1 e to 3 almost as far as the margin, the base of the areas 4 to 6 and at least the apex of the discal cell. Ground-colour beneath varying between a bright violettish red and dark greyish-brown; forewing as usually in the centre extensively orange-red; the spots are normally developed, the discal spots of the hindwing, however, are, as is stated in the review of the species, united into an irregular transverse stripe. Cape Colony to Transvaal.

**Ph. almeida** Fldr. (70 g) is very similar to *Ph. thyra* and only discernible by the marking of the *almeida*. hindwing beneath. Cape Colony to Transvaal. — The figure shows little likeness to the original.

**Ph. dentatus** Swierstra is unknown to me. The description says: above orange-yellow with blackish- *dentatus*. brown margins; forewing at the base lighter than in the centre, somewhat sealed black; the black marginal



band begins behind the middle of the costal margin, being broadest at the apex and narrowing down all of a sudden at vein 4 and then remaining equally broad as far as vein 1; the marginal band of the hindwing commences at the costal margin behind the middle, it is very broad as far as vein 4, forming a square spot, and then much narrower as far as the posterior angle and on the inside deeply dentate; fringes brownish; the hindwing beneath, as well as the apex and marginal band of the forewing are purple red with the usual spots and streaks on both wings; forewing orange-yellow, almost as above, lighter towards the posterior margin; three black spots pupilled silvery white in the discal cell; a postmedian row of 5 black spots bordered with white towards the base, the second of which is the nearest to the base and forms an angle with the first at the costal margin and with the third; the fourth and fifth in a transverse row; a submarginal row of 7 similar though somewhat larger spots, and at the margin a row of 8 black, rather indistinct spots exhibiting white dots towards the margin. Hindwing beneath with a transverse row of 4 white, black-ringed subbasal spots, a median transverse row of three such spots, the central one of which is at the cell-end, a bent, dentate, whitish median band distally bordered with dark, and small, white marginal spots. Closely allied to *Ph. thyra* (70 g), but with a larger apical spot and a narrower marginal band of the forewing. Transvaal.

*picus.* **Ph. pierus** *Cr.* (70 f). ♂. Forewing above uni-coloured blackish-grey or blackish or only with a small, indistinctly defined orange-yellow spot in the centre of the areas 2 and 3; hindwing above with a shortened orange-yellow submarginal band extending between the veins 1 b and 5 (or 6) and being the broadest in the areas 2 and 3 without, however, touching the base of these areas. The ♀ differs by the shape of the wings and by somewhat larger yellow areas above. Hindwing beneath throughout lighter and less monotonous than in *thyra* and *almeida*. Cape Colony and Caffraria.

*conradi.* **Ph. conradi** *Auriv.* (70 d, e) by the colouring above forms a transition between the preceding species and the two following very dark species. In the ♂ the wings above are blackish-grey or blackish; the forewing in the centre feebly lighter greyish so that the black spots beneath show through, and before the dark marginal bands with small yellowish-grey spots; hindwing without spots at the proximal margin and at the anal angle more grey; fringes reddish, at the ends of the veins darkened. In the ♀ the wings are above blackish; the forewing in the centre feebly lighter yellowish with black spots showing through from beneath, and with a coherent, distally distinctly, proximally indistinctly defined ochreous yellow submarginal band between the veins 1 and 6; hindwing between the veins 1 b and 6 with a broad yellow marginal band which is only separated from the margin by the dentate black marginal line being expanded between the veins like dots, but which proximally by far does not reach to the base of the areas 1 c to 3. Hindwing beneath violettish-red with yellowish, mostly separate spots. German East Africa: Ukerewe.

*taikosama.* **Ph. taikosama** *Wallengr.* (70 d, f). As to this species we merely refer to the review of the species and to the figure. From Cape Colony to Kikuyu in British East Africa.

*orthrus.* **Ph. orthrus** *Trim.* (70 e, f) is the darkest species of the genus, only distinguished from *taikosama* by the marks stated above. The sexes are more similar in the shape of the wings than in the other species. The under surface hardly differs from that of *taikosama*. Natal, Zulu Land, Transvaal, Delagoa Bay.

*barklyi.* **Ph. barklyi** *Trim.* (70 i). Wings above without spots, somewhat bluish silvery grey with a narrow black marginal band of the forewing and a black subapical spot of the hindwing; in the ♀ there is within the marginal band of the forewing, between the veins 2 and 7, a large orange area touching the apex of the cell; forewing beneath of a bright reddish yellow with a blackish-grey costal and distal margin and the usual spots; hindwing beneath dark blackish-grey with indistinct yellowish and blackish spots. This most peculiar species was hitherto only captured in the western parts of Cape Colony; it is very swift on the wing and very timid; it was found drinking from flowers of a species of *Mesembryanthemum*.

### Third Group of Species.

Nearly all the species of this group are smaller than those of the two first groups. They are generally recognizable by the black discal spots on the forewings above, only in *Ph. phosphor* these spots are absent, being above entirely united with the very broad black marginal band. The forewing sometimes exhibit 12 veins (vein 7 terminating into the margin) sometimes only 11, in which case vein 9 is absent and vein 7 terminates into the apex of the wing.

All the species are confined to South Africa; several only occur in Cape Colony itself and have a very local range. By the obliging kindness of Mr. L. PERINGUEY I had the chance of examining nearly all the species; but as I have seen but few specimens, I am unable to say anything about their variability. The following review of the species may therefore only be regarded as an experiment. In the species I examined the palpi below exhibit bristles between the scales.



## Review of the Species.

- A. Margin of forewing at vein 4 or 5 distinctly angular, dentate or indented. Forewing with 12 veins.
- α. Hindwing at the end of vein 1 b distinctly tailed. Forewing above with a large black spot at the end of the discal cell and sometimes also with such a dot in the cell. Hindwing above with a coherent, but posteriorly often disappearing black postdiscal band.
- \*. A large species with an expanse of 40 to 55 mm. Forewing above with a black coherent discal band which is in the area 1 b generally united with the broad black marginal band. The postdiscal band of the hindwing only reaches to vein 2 and is in front very much widened. *Ph. sardonys*.
- \*\*. A smaller species with an expanse of about 30 mm. Forewing above with a very broad black discal band entirely enclosing the discal spots. Hindwing above at the base and at the costal margin broad blackish; its postdiscal band reaches to the proximal margin. *Ph. phosphor*.
- β. Hindwing at the anal angle sharply extended, but not tailed. Both wings above with 5 to 7 separate black discal spots.
- \*. Both wings above at the base broadly darkened with a bright silvery blue lustre.
- †. Hindwing beneath almost uni-coloured ochreous-yellow without silvery spots. *Ph. osbecki*.
- ††. Hindwing beneath with several irregular or H-shaped silvery spots. *Ph. thysbe*.
- \*\*. Both wings above almost as far as the base orange-red without any blue. Hindwing beneath variegated with silvery spots. *Ph. palmus*.
- B. Margin of forewing uniformly rounded. Hindwing at the anal angle only shortly extended or angular.
- α. Both wings above at the base broad black and densely scaled blue. Forewing with 12 veins. *Ph. pyrois*.
- β. Wings above not blue at the base.
- \*. Fringes of wings unspotted or with light spots between the ends of the veins.
- o. Fringes of wings broad black with large white spots between the ends of the veins. Hindwing beneath with golden or silvery spots. Forewing above with 5, hindwing at most with three black discal spots. Forewing only with 11 veins. *Ch. chrysantas*.
- oo. Fringes of wings not or only indistinctly spotted light.
- §. Hindwing above without discal spots (or only in 5 and 6 with small dots) and only with more or less united black marginal spots. Forewing with 12 veins.
1. Hindwing above at the costal margin not or narrowly darkened; forewing above with a transverse row of 3 to 7 often almost contiguous discal dots. *Ph. lycegenes*.
2. Hindwing above at the costal margin at least as far as vein 6 broadly blackish-brown. Forewing above only with 1 to 3 quite separate discal dots. *Ph. lyncurium*.
- §§. Both wings above with a postdiscal transverse row of 3 to 7 black discal spots.
- †. Hindwing beneath with silvery spots. Forewing with 12 veins. *Ph. aethon*.
- ††. Hindwing beneath without silvery spots.
1. The black marginal band on the forewing above decorated with reddish-yellow marginal spots. Forewing with 12 veins. *Ph. felthami*.
2. Marginal band of forewing above without spots.
- a. The discal spot in area 1 b of the forewing is situated nearer at the margin than the discal spot in 2. Forewing with 12 veins. *Ph. chrysaor*.
- b. The discal spot in area 1 b of the forewing is more remote from the margin than the spot in 2. Forewing only with 11 veins. *Ph. zeuxo*.
- \*\*. Fringes of wings with white spots at the ends of the veins. Both wings above with distinct discal spots or dots. Hindwing beneath with silvery markings. Forewing only with 11 veins. — *Chrysoritis* Btlr. *Ph. oreas*.

**Ph. sardonys** Trim. By its size and the shape of its wings this large species approximates the species *sardonys* of the first group, by the scheme of markings above it fits best into this group, but by the marking of the hindwing beneath it deviates from all the other species. The margin of the forewing is at vein 4 distinctly angular and that of the hindwing at the ends of the veins dentate and at the end of vein 1 b with a short tail. The ♂ is smaller than the ♀ and has more pointed forewings with an almost straight margin. Wings above yellowish-red with black markings, at the base narrowly darkened, forewing with a black marginal band of



about 3 mm width, being somewhat broader at the apex and anal angle, a black costal-marginal stripe from the centre of the costal margin to the marginal band, a black discal band composed by the discal spots, usually extending from the costal margin as far as into area 1 b and separating a submarginal band of the ground-colour, and with a larger black spot at the end of the discal cell and a similar dot in the cell; hindwing with an undulate black marginal line expanding at the apex of the wing into a large dark costal-marginal spot, this spot being either rounded and only reaching to vein 4 or being continued as a discal band as far as vein 2; anal region somewhat darkened. Fringes white, at the ends of the veins spotted black. On the under surface the hindwing as well as the marginal part and costal margin of the forewing exhibit a dull brownish-red or dark rusty yellow ground-colour; forewing in the centre light reddish-yellow with silvery dots surrounded by black; two in the discal cell, one at the cell-end and six discal dots in 2 to 6 and 9; the spots on the hindwing beneath are replaced by white streaks, two of which are in area 7 and one each in the areas 1 a to 6, together forming a discal transverse band. It flies in the centre of Cape Colony in dry districts. — ab. *peringueyi* ab. nov. only deviates by the hindwing beneath being uni-coloured rusty brown without white or silvery markings. Cape Colony.

*phosphor.* **Ph. phosphor** Trim. This small rare species deviates from all the others by the extremely fine small tail at the anal angle of the hindwing and is evidently most closely allied to *Ph. sardonyx* (74 i). Forewing above lustrous golden orange with a very broad black marginal band tapering off towards the anal angle, and a black spot at the cell-end; the marginal band reaches to the centre of the costal margin and is connected there with the transverse spot; no other spots; the base is slightly darkened; hindwing above orange-yellow, at the base, costal and proximal margins broad blackish, with an antemarginal row of often contiguous black submarginal dots or spots. Wings beneath with a greyish-yellowish ground-colour and metallic spots surrounded by black, which are just as numerous as in the other species but differently arranged, the basal spot in 1 b of the forewing being situate right behind the second spot of the discal cell and the discal spots 1 b and 2 forming a transverse streak almost touching the posterior angle of the cell, and the discal spots 2 and 4 consequently are not much nearer at the margin than the others. Hitherto only found in Caffraria Proper on the Tsomo and Bashee Rivers.

*palmus.* **Ph. palmus** Cr. only differs from *thysbe* (70 h) by the reddish-yellow ground-colour on both wings above almost touching the base; the marginal band and the discal spots are almost like in *thysbe*. Cape Colony.

*thysbe.* **Ph. thysbe** L. (70 h). Wings above orange, at the base as far as or almost as far as the centre blackish with a bright silvery blue reflection; forewing at the costal margin narrowly black and with a narrow black marginal band enclosing small reddish-yellow marginal spots; a black transverse spot at the end of the cell and 5 or 6 angular black discal spots in (1 b) 2 to 6, of which those in 2 and 4 are situate nearer at the margin than the others, hindwing above with separate black discal spots in 1 c to 6 of which those in 2 and 4 are situate nearer at the margin, and with a narrow black marginal band which, however, only extends from the costal margin to vein 6 or 4 and which is rearwards replaced by black marginal dots; fringes of the wings orange-yellow with interspersed white scales and with black dots at the ends of the veins. Forewing beneath orange with the usual black, partly white-pupilled spots, at the costal and distal margins brownish or brownish-grey with dark veins and light longitudinal streaks between the veins; hindwing beneath with alternately rusty brown and yellowish-brown ground-colour and distinctly prominent angular silvery spots, of which a streak and a triangular spot bordered with rusty brown are in area 7, two often V-shaped contiguous streaks in the cell, an H-shaped one in area 3, and other irregularly angled ones in 1 c, 5 and 6. From Cape Colony to the Zululand. The species varies considerably; one race which appears to predominate in certain mountainous districts of Cape Colony, merits special mentioning. — **nigricans** var. nov. (70 h) differs by the ♂ above showing the orange-yellow colour entirely or almost entirely removed by the extension of the black markings; the apical half of the forewing is either uni-coloured black or it only encloses 2 to 5 separate yellow spots, and on the hindwing the orange colour is confined to a marginal band of only 2 mm width being parted by the black veins, between the proximal margin and vein 6; the ♀ differs but little from the ♀ of the principal form. Cape Colony, particularly on the Muizen Mountain.

*osbecki.* **Ph. osbecki** Auriv. only differs from *thysbe* by the monotonously brownish-yellow, entirely unspotted under surface of the hindwing and may be merely a race or aberration of this species. Also the forewing is beneath at the costal and distal margins monotonously brownish-yellow without markings; hindwing beneath with a fine reddish-yellow marginal line. This form was discovered in Cape Colony in 1750 by LINNÉ'S disciple P. OSBECK on his excursion to China, but it has become little known since and only few specimens have been captured.

*pyroeis.* **Ph. pyroeis** Trim. Both wings above at the base broad black and densely scaled blue; the black basal area on the forewing reaches to the centre of the cell and of the posterior margin and is consequently distally slantingly cut off; on the hindwing it reaches at the proximal margin at least to the apex of vein 1 a and at the costal margin almost to the apex of the wing, but in the centre only to the apex of the discal cell; outside of the basal area both wings are above orange-yellow with a black marginal band of hardly 2 mm width and



black discal spots; forewing besides with a black costal-marginal band, a black dot in the cell and a black transverse spot at the cell-end; the discal spots of the forewing are 6 (in 1 b to 6) and are situated a little nearer at the margin than they usually are, those of the areas 4 to 6 are contiguous and are situated in a slanting, straight line extending towards the centre of the margin; hindwing with 6 separate discal spots, in the centre also outside of the basal area with a distinct blue reflection. Beneath the hindwing, as well as the costal margin and apex of the forewing are of a rusty brown; forewing otherwise reddish-yellow with the usual black spots and close before the margin with a row of black submarginal dots; hindwing almost unmarked, but generally with a bent row of white postdiscal dots. Cape Colony, in the south-western parts.

**Ph. chrysantas** Trim. Of this species only the ♀ is known and has been described. Wings above light orange-yellow with a narrow black marginal band and black discal spots in the usual number and arrangement; the marginal band is tapering off posteriorly and at the apex it encloses a rounded white spot; hindwing above orange-yellow with or without discal spots and with a narrow dentate marginal band; the species is particularly distinguished by the broad white-spotted fringes. Beneath the hindwing and the costal and distal margins of the forewing are light grey with the usual spots some of which are filled up with gold. Cape Colony. *chrysantas*.

**Ph. lycegenes** Trim. (70 i). Wings above orange with a coppery lustre, at the base slightly darkened, at the margin with a narrow black, more or less dentate marginal band; hindwing otherwise usually unmarked; forewing with a basal dot in 1 b, a dot in the cell, one at the cell-end and an almost coherent row of discal dots, all of which are black. Forewing beneath orange-red, at the costal margin and apex grey with the same spots as above and besides with small black submarginal dots. Hindwing beneath yellowish brownish-grey with small basal dots and streak-shaped discal dots being united to a line. Natal. *lycegenes*.

**Ph. lyncurium** Trim. (70 i) only differs from *lycegenes* by the marks stated in the review. Hindwing beneath with more or less distinct orange submarginal bows. Only found in Caffraria on the Tsomo River. *lyncurium*.

**Ph. aethon** Trim. (70 h). Wings above orange-red with a black marginal band and 5 or 6 similar discal spots; forewing besides with a transverse spot at the cell-end, a basal spot in 1 b and generally also in the centre of the cell; forewing beneath besides with submarginal dots in 1 b to 7; hindwing beneath light rusty brown with several silvery spots. Transvaal. *aethon*.

**Ph. felthami** Trim. (70 h). Wings above orange-red with a black central spot and black discal spots which are normally arranged; forewing besides with an equally broad black marginal band enclosing small marginal spots of the ground-colour; hindwing instead of the marginal band with separate black submarginal dots; margin of hindwing at the end of vein 4 distinctly angular. Hindwing beneath Isabel-coloured grey with large, ring-shaped, but indistinct markings. Amongst the downs on the Minzenberg River in Cape Colony, discovered by Mr. H. L. L. FELTHAM in 1900; it is very swift on the wing and always settles down on shrubs, not on the ground. *felthami*.

**Ph. chrysaor** Trim. (70 i) is very much like the following species and only differs by a narrower marginal band above, a more lustrous ground-colour, a more extended anal angle of the hindwing, and particularly by the different position of the discal spot in 1 b on the forewing. Cape Colony, Caffraria, and Natal. *chrysaor*.

**Ph. zeuxo** L. Wings above lustrous golden orange-red with a black central spot and discal spots being normally arranged; forewing besides with a black, equally broad marginal band and a small dot in the discal cell; hindwing with a narrow, at the apex broader marginal band, and distinct black submarginal spots. Forewing beneath reddish-yellow, at the costal and distal margins dark grey, spots distinct. Hindwing beneath grey with rather indistinct spots. Cape Colony, environs of Cape Town. *zeuxo*.

**Ph. oreas** Trim. (70 i). Wings above orange-yellow, at the base dusted with blackish; the dusting on the hindwing extends to the centre or the discal spots; both wings above with discal spots and a marginal band; the latter is on the forewing broad and coherent, on the hindwing narrow or broken up into spots; fringes of the wings spotted white at the ends of the veins; forewing beneath orange-yellow, normally spotted and with distinct submarginal spots; hindwing beneath rust-coloured with numerous silvery, angular or streak-shaped spots or markings. Natal hitherto only met with on a little area in the Mountains. *oreas*.

## 21. Genus: **Crudaria** Wallengr.

I have formerly combined this genus with *Phasis*, but here I quote it not without diffidence as a separate genus. *Crudaria* is distinguished by the forewing showing only 11 veins, vein 9 being absent and vein 7 terminating into the apex or into the costal margin close before the apex, and by the hindwing being lobate at the anal angle and provided with an extremely fine small tail at the end of vein 1 b. Both marks may occur separately



in species of *Phasis*, but as much as I know, they do not occur together there. Margin of the wings and fringes entirely margined. Palpi long, with appressed scales and without bristles. Anterior tibiae unarmed. As to the marking, the discal spots are only proximally and distally (not all around) bordered with black, and the discal spots of the areas 1 b to 4 on the forewing are in an almost straight line. Abdomen of the ♀ at the apex with a dense ball of scales. Only 1 species is known.

*leroma*. **C. leroma** Wallengr. (70 i). Both wings above monotonously light blackish-grey without markings (the spots beneath show somewhat through); fringes distally whitish; anal lobe scaled blackish. Under surface lighter grey with whitish spots on the forewing and indistinct or white ones on the hindwing; forewing with a broad black longitudinal streak at the base of area 1 b, a silvery dot at the base and a larger one posteriorly bordered with black in the centre of the cell, a transverse spot at the cell-end and 8 or 9 discal spots, of which those of the areas 1 b to 5 are only filled up with whitish, those of the areas 6, 8 to 11 more lustrous silvery directly on the outside of the discal spots a row of indistinct, silvery postdiscal streaks; hindwing beneath with basal and discal spots, postdiscal streaks and marginal spots all of which are generally very indistinct, but sometimes white and distinctly prominent, **albomaculata** form. nov.; anal region yellowish, anal lobe black; the small tail is black with a white apex. The species was described by WALLENGREN according to specimens from the Collection of J. A. WAHLBERG probably originating from Natal or Transvaal, and it has later on been met with in Cape Colony, in the Damara and Mashuna Land and even in German East Africa near Kigonsera.

## 22. Genus: **Erikssonia** Trim.

Eyes bare. Palpi long, porrect, below densely clad with hair-like scales. Antennae of moderate length, towards the apex only gradually thickened with a distinctly defined club. Forewing with 12 veins; vein 7 into the margin; vein 6 for some distance forked with 7. Hindwing at the anal angle distinctly lobate or angular without a small tail. Anterior tibiae in the ♂ at the apex armed with a strong spine. Middle and posterior tibiae with very short terminal spurs.

The species of this genus, by the colour and markings, recall certain forms of the *Lipteninae*, but they are actually closely allied to the genus *Phasis* and differ from all the *Lipteninae* by the hindwing being distinctly extended at the anal angle.

Both species closely agree in the number and arrangement of the black spots beneath. The forewing has two successive dots in the discal cell, a transverse spot at the cell-end, generally a basal dot in 1 b, and 5 or 6 discal spots of which those of the areas 1 b to 3 are situate nearer at the base than the others, the discal spots in 4 to 6 are situate in an almost straight transverse line, the spot in 1 b being sometimes absent; 2 to 3 mm distant from the margin extends a coherent dark submarginal line or a row of submarginal streaks. Hindwing beneath with one basal dot in 1 b, two in 1 c, two in the cell, and one in 7, a transverse spot at the cell-end and 7 or 8 discal dots of which that in area 7 is larger and situate right before the spot at the cell-end; behind the discal spots there extends, like on the forewing, a dark, more or less bent submarginal line which borders proximally on the marginal band.

### Review of the Species.

- A. Marginal band above narrow, only 1 mm broad. On the under surface the veins are at the margin not or but finely black, the ground-colour there not divided into spots. *E. acraeina*.
- B. Marginal band above broad, on the forewing at least 2 mm broad. On the under surface the veins are between the margin and the submarginal line broad black and divide the ground-colour into 6 or 7 light marginal spots. *E. cooksoni*.

*acraeina*. **E. acraeina** Trim. (71 a). Wings above orange-yellow with a black marginal band of about 1 mm width and with markings faintly showing through from beneath; forewing with a black costal-marginal band beginning at the centre of the cell and reaching to the apex, but being before the apex deeply indented by the ground-colour in area 6; sometimes there are also above some of the discal spots distinctly visible; hindwing above unmarked or with a distinct black submarginal line. Beneath lighter or darker orange-yellow with the above-mentioned markings, the basal and discal spots small or moderately large. Discovered in the Ovambo Land by the Swedish explorer AXEL W. ERIKSSON.

*cooksoni*. **E. cooksoni** Ham. Druce (74 a) is larger and darker, more reddish than *acraeina*, particularly beneath where the hindwing is covered with red at the base and between the discal spots and the submarginal line; basal dots large; the submarginal line, the black marginal line, and the broad black ends of the veins



together form a black marginal band of  $3\frac{1}{2}$  to 4 mm width enclosing large whitish or yellowish spots. North West Rhodesia.

### 23. Genus: **Spalgis** Moore.

Frons narrow. Eyes bare. Palpi very long, porrect, thinly clad with appressed scales; terminal joint long. Antennae short and stout, gradually thickened towards the apex with an indistinctly defined circular club; the joints of the antennal shaft short, not longer than broad. Wings broad, almost entire-margined; hindwings without tails, at the anal angle entirely rounded off. Forewing with 11 veins; vein 9 is absent; vein 7 into the apex; 10 and 11 separate from the costal margin of the discal cell; vein 8 longer than the footstalk of 7 and 8; vein 6 separate from the apex of the discal cell. Anterior tibiae not armed.

By the entirely rounded tailless hindwings this genus agrees with many species of the last group of genera, but is at once discernible from all the forms of this group by the formation of the antennae.

Small, slender lepidoptera the wings of which show a white ground-colour, beneath decorated with numerous, fine, black, often irregularly extending transverse lines; margin at the ends of the veins almost unnoticeably indented and at least beneath dotted black. Sexes almost similar, the ♂ forewing, however, more triangular and more pointed.

The larvae live on shield lice and are visited by ants. Pupae freely suspended, if seen dorsally, they are reported to resemble a monkey's head.

#### Review of the Species.

- A. Hindwing beneath with but few, 7 to 9, dark transverse lines. Forewing above without a dark anal-marginal band.
  - α. Ground-colour of both wings white. Hindwing without a dark costal-marginal band. *S. lemolea*.
  - β. Ground-colour of both wings in the basal part light straw-coloured. Hindwing above at least in the ♀ with a broad blackish costal-marginal band. *S. pilos*.
- B. Hindwing beneath, particularly in the basal part, very densely decorated with small, dark dots and small transverse streaks arranged in 17 to 20 transverse rows. Forewing above also at the anal margin broadly darkened; the white ground-colour thus only appears in the centre of the wing. *S. tintinga*.

**S. lemolea** Ham. Druce (71 b). Wings white; forewing above at the base, at the costal margin, apex *lemolea*. and distal margin broadly black or blackish; hindwing above only with small, black dots at the ends of the veins or also with a fine, dark marginal line; in the ♀ sometimes with a blackish-grey marginal band. Both wings beneath with a fine marginal line being thickened at the ends of the veins and 7 or 8 more or less interrupted, fine, dark transverse lines evidently corresponding to the streaks proximally and distally bordering on the vanished spots beneath. The peculiar larva resembling a shield-louse was already in 1891 discovered on the Ogowe River by the American missionary A. C. GOOD and then described and figured by HOLLAND in 1892; it lives on shield lice of the genus *Dactylopius* and resembles the shield-lice so much that it is difficult to discover it among them. The pupae are fastened on leaves and their dorsal side is said to be remarkably similar to a human or monkey's face. In the whole of West Africa from Senegambia to Rhodesia and Kavirondo in Uganda.

**S. pilos** Ham. Druce is only known in the female and only differs from *lemolea* by the marks mentioned in the review. It may be merely a form of it. Gambia.

**S. tintinga** Bsd. is smaller than the species of the continent and deviates from them particularly *tinting*a. by the marking beneath (see above). Forewing above blackish, hued somewhat bluish, in the centre with a large whitish area covering the apex of the cell and the base of the areas 1 b to 4; the fine, black markings beneath diaphanous in the white area. Hindwing above white, at the base as far as the apex of the discal cell darkened by blackish-grey; the markings beneath diaphanous. Madagascar.

### 24. Genus: **Arrugia** Wallengr.

Antennae short and robust, almost beginning from the base gradually thickened towards the apex (= the club commences near the base) with short joints. Palpi long, porrect, with appressed scales. Frons broad. Eyes bare. Anterior tibiae not armed. Anterior feet also in the ♂ distinctly jointed and with two terminal claws. Forewing with 11 veins; vein 7 into the apex of the wing; 10 and 11 separate; 6 separate from the apex of the discal cell.

Forewing with 1 or 2 dots in the discal cell, a basal dot in 1 b, a transverse spot at the cell-end, 6 or 7 discal spots and smaller submarginal spots black or blackish; the discal spots of the areas 1 b to 3 are removed towards the base; above these spots are often partly indistinct. The hindwing has one basal spot each in 1 a to 1 e, 7 and the cell, a transverse spot at the cell-end, 6 or 7 discal spots, of which those of the areas 1 c to 4 are usually in a straight-line, and small submarginal spots or dots; all these spots may often also be indistinct beneath.

The lepidoptera are fond of very hot and dry places, resting on the bare ground and flying only for short distances.

#### Review of the Species.

A. Both wings above in the centre more or less lighter ochreous.

*A. protumnus.*

B. Wings above in the centre grey or whitish or not lighter at all.

α. At least the forewing above in the centre or behind the jet-black discal spots lighter whitish. Antennae at least 7 mm long.

*A. basuta.*

β. Forewing above in the centre not lighter. Antennae not attaining a length of 6 mm.

*A. brachycera.*

*protumnus.*

**A. protumnus** L. (71 b). Wings above blackish-brown, in the centre more or less ochreous, in contrast with the ochreous colour the dark discal spots and on the forewing also the transverse spot at the end of the discal cell are distinctly prominent; the discal spots (1 b) 2 to 4 of the forewing are arranged in an almost straight, slanting line forming almost a right angle with the discal spots 4 to 6; in the ♀ the discal spots 2 and 3 are prolonged towards the base and fill up the bases of their areas, whereas in the ♂ they are small and almost entirely removed by the broad, dull grey sealing of the veins 2 to 4; this sealing forms a mealy spot, whereby the ♂♂ are most easily distinguishable from the ♀♀. Forewing beneath light ochreous-yellowish with distinctly prominent black spots which, however, are smaller than above; at the costal and distal margins speckled grey and brown; hindwing beneath of a whitish-grey ground-colour and with brownish-grey, more or less contiguous, large basal and discal spots. Fringes of wings, at least of the forewings, with distinct white spots between the ends of the veins. Distributed from Cape Colony to Transvaal.

*basuta.*

**A. basuta** Wallengr. (71 a). Wings above blackish-grey with a black central spot and black discal spots which, however, may be very indistinct on the ♂ hindwing; forewing with a white spot in the base of the areas 4 and 5, and a coherent transverse row of quadrangular, grey or white spots in 1 b to 6 immediately outside of the discal spots; in the ♀ such spots also appear on the hindwing, in the ♂, however, they are there only faintly noticeable; the ♂ on the forewing above in the base of the areas 2 and 3 and on the basal part of the veins 2 to 4 with a dull grey mealy spot. Under surface in the ♂ with a whitish-grey ground-colour and small, indistinct spots on the hindwing, in the ♀ whitish with larger and more distinct spots on the hindwing. Cape Colony to Transvaal.

*brachycera.*

**A. brachycera** Trim. (71 a, b) is easily recognizable by the wings above being blackish-grey or blackish; the central spot and the black discal spots indistinctly contrast with the dark ground-colour. Wings beneath grey with black discal spots usually arranged in an arcuate row on both wings. This species, distinguished by the short antennae, has hitherto only been met with in Cape Colony.

#### Fifth Group of Genera.

By the marks mentioned in the review (p. 361) the genera belonging hereto are distinguished from the other *Lycaenidae*. They are easily recognized by the long, thin joints of the antennal shaft and by the hindwing being entirely rounded off at the anal angle, and form a quite natural division with numerous species.

Many authors divide this group of genera into a very great number of genera. For reasons which I shall describe more at large at foot, I shall here regard these „genera“ only as subordinate genera of three large and very natural genera. All agree in the fact that the species placed here to the genera *Lycaenesthes*, *Cupido* and *Heodes* are more closely allied to each other than to the species of the other genera. The same, however, is not the case with the subordinate genera, the differences of which are so great that it is possible that they are only based upon analogies and not upon homologies, and thus do not exhibit a real affinity. The first and foremost attribute of a natural genus must be that the species contained therein must be more closely allied to each other than to the species of any other genus.



## Review of the Genera.

- A. Hindwing at the margin with 3 (or rarely only with 2) hair-tufts at the ends of the veins 1 b, 2 and 3.  
25. *Lycaenesthes*.
- B. Hindwing without any small tails or hair-tufts or only at the end of the vein 2 with a short tail.
- α. The upper discocellular vein of the forewing is present and generally very slanting; vein 7 or the footstalk of 7 and 8 of the forewing therefore rises separate from vein 6 and apparently a little before the apex of the discal cell. Forewing never beneath in the discal cell with more than a black dot.  
26. *Cupido*.
- β. The upper discocellular vein of the forewing is absent; veins 6 and 7 of the forewing therefore rise always from the same place or on a short footstalk. Forewing beneath in the discal cell with two black dots situate in a straight line with the spot at the end of the discal cell.  
27. *Heodes*.

25. Genus: **Lycaenesthes** Moore.

The African species of this genus occurring also in South Asia have recently been dealt with in an excellent monography by G. F. BETHUNE-BAKER (Transs. Ent. Soc. London 1910, p. 1 to 84, 13 tables). Although I consider it at least for the present to be advisable to regard his genera as subordinate genera, I shall otherwise follow this monography in all the essential parts. BETHUNE-BAKER established five genera which he distinguishes in the following way.

- A. Forewing with 11 veins; vein 9 is absent, but vein 8 is distinct, though sometimes very short.
- α. Veins 10 and 11 rise from the costal margin of the discal cell and run quite separately. *Cupidesthes*.  
*Lycaenesthes s. str.*
- β. Vein 11 of the forewing rises separately, but then it is fused with vein 12 for some distance; vein 8 very short. *Neurypexina*.
- B. Forewing with 10 veins; veins 8 and 9 are both absent.
- α. Vein 11 runs separately without being fused with vein 12. *Neurellipes*.
- β. Vein 11 is for some distance fused with vein 12. *Triclema*.

*Cupidesthes* was established by me in 1895 for a species with bare eyes (all the other species have distinctly often very densely haired eyes). BETHUNE-BAKER added to *Cupidesthes* several species with hairy eyes. But it is not clear to me how in such a case *Cupidesthes* and *Lycaenesthes* can be distinguished; for the differences in size, robustness of the body and shape of the wings do not form a distinct limit. The other genera are easily discernible; it is, however, questionable whether the disappearance of vein 8 or the fusion of vein 11 with vein 12 may have been brought about quite independently in different species, and that thus species with 10 veins are not more closely allied to each other than to species with 11 veins.

And, moreover, the structure of the veins may vary in the same species. There are for instance several specimens before me of *L. lusones*, in which vein 8 of the forewing is distinct and vein 11 for some distance fused with 12. It is therefore impossible for me to maintain yet the „genera“ *Neurypexina*, *Neurellipes* and *Triclema* as groups of species.

## Review of the Groups of Species.

- A. Eyes bare — Subordinate genus *Cupidesthes* Auriv. First Group.
- B. Eyes distinctly, usually very densely haired.
1. Forewing beneath from the base to the apex of the discal cell uni-coloured without markings or only with a black longitudinal streak at the base of area 1 b. Palpi beneath smoothly scaled, without bristles. Second Group.
2. Forewing beneath also in the basal part with markings. Third Group.

## First Group of Species.

This group only comprises one species. The other species combined with it by BETHUNE-BAKER I place to the second group. Forewing with 11 veins; vein 11 running separately. Palpi with appressed scales, without bristles.

*robusta*. **L. robusta** Auriv. (71 b). ♂. Wings above blackish with a distinctly defined blue area; the blue area of the forewing is situate at the base, covering the areas 1 a and 1 b as far as beyond the middle (the black part of 1 b about 4 mm broad), almost the whole discal cell and the basal quarter of area 2; on the hindwing the blue colour covers the discal cell, the anterior longitudinal half of 1 c, the areas 2 and 3 almost to the margin and the areas 4 and 5 as far as 2 mm before the margin. Wings beneath whitish with discal spots bordered with brown and a similar transverse spot at the end of the discal cell. Forewing besides with a brownish, white-ringed spot in the discal cell (this spot is absent in all the other species placed to *Cupidesthes* by BETHUNE-BAKER), and the hindwing with four such basal spots. Hindwing in the anal region with four black dots scaled silvery white at the margin, one in 1 b, two in 1 c, and one in 2. ♀ unknown. Cameroon.

### Second Group of Species.

The species of this group are very numerous, but all are immediately recognizable by the forewing beneath being uni-coloured as far as the apex of the discal cell without any markings or only with one black longitudinal streak at the base of area 1 b.

Both wings beneath have a transverse spot at the end of the discal cell and a more or less irregular row of discal spots. These spots are generally in the middle not darker than the ground-colour, but on each side bordered at first by a dark and then by a white or whitish transverse streak or transverse bow. On the forewing follows then a transverse row of 6 or 7 submarginal spots bordered with white, and a dark marginal line being often proximally bordered with white. Hindwing beneath usually with 1 to 4 basal dots, two white submarginal lines composed of bows, and a white and a dark marginal line; in addition generally black, metallic scaled eye-spots proximally bordered with yellow or red in 1 b, 1 c, and 2.

### Review of the Males.

I. Forewing beneath in the basal part of area 1 b not coloured black. Frons with bristly hair, black, with fine white lateral lines, rarely also lighter whitish-grey along the middle. Hindwing with 3 to 5 hair-tufts at the ends of the veins 1 b, 2 and 3 (4 and 5).

A. Hindwing beneath without any basal dots or basal spots and thus as far as the apex of the discal cell uni-coloured without markings.

α. Both wings above monotonously dark bluish-violet without markings.

\*. All the discal spots of the hindwing of the ground-colour (not red). *L. musagetes*.

\*\*. At least the discal spot in area 1 b of the hindwing filled up with red.

1. The discal spot in 7 of the hindwing is red and punctiform. *L. anadema*.

2. All the discal spots of the hindwing filled up with reddish. *L. ituria*.

β. Wings above dark brown without a violet tinge; hindwing above with a broad orange marginal band and black marginal dots in 1 b to 5. *L. rubricincta*.

B. Hindwing beneath at least in area 7 with a basal dot or basal spot.

α. The basal spot in area 7 of the hindwing is not distinctly prominent and never black with a light ring; it is not darker than the ground-colour or at least not darker than the discal spots.

\*. ♂. Forewing above black with a distinct light blue anal-marginal spot reaching the base of the areas 1 a and 1 b. Frons black with fine white lateral lines but without a light median line. Hindwing beneath without a spot in the discal cell; above almost entirely blue or light greenish (BETHUNE-BAKER places these species to *Cupidesthes*).

o. ♂. The bluish-greenish anal-marginal spot of the forewing above does not cover the discal cell but only the base of the areas 1 a and 1 b. The dark transverse line proximally bordering in the forewing beneath on the discal spot in 1 b, is removed far towards the base and almost reaches the base of vein 2. — ♀ with anal wool. Both wings above in the centre or for the greatest part white.

1. ♂. Anal-marginal spot of forewing and hindwing above as far as the proximal margin violettish-blue. *L. voltae*.

2. ♂. Anal-marginal spot of forewing light silvery blue or greenish; hindwing above at the costal margin black, at the proximal margin broadly whitish, otherwise light silvery blue or greenish. *L. arescoba*.

§§. ♂. The blue anal-marginal spot of the forewing covers the discal cell and almost reaches the margin in 1 a (and 1 b). — ♀ without anal wool. Both wings above dark greyish-brown, in the middle not or only faintly lighter.



1. Discal spots beneath large and the proximal dark border-line of the discal spot in 1 b of the forewing almost reaches the base of vein 2. *L. lithas.*
  2. Discal spots beneath smaller; the proximal bordering of the discal spot 1 b of the forewing far remote from the base of vein 2. *L. thyrasis.*
- \*\*.
- ♂. Wings above brown or quite dark violettish-blue without a special anal-marginal spot of the forewing.
  - §. Wings above dark brown without a violet reflection. Hindwing beneath without a spot in the discal cell. *L. leonina.*
  - §§. ♂. Wings above darker or lighter violettish-blue, sometimes at the costal and distal margins black.
  - †. Wings beneath with a brown or dark grey ground-colour.
    - o. Hindwing beneath without a spot in the discal cell. *L. chirinda.*  
*L. pauperula.*
    - oo. Hindwing beneath with a basal spot in the discal cell.
      1. ♂. Forewing above almost as far as the margin dark violettish-blue. *L. ligures.*
      2. ♂. Forewing above with a black marginal band being at least at the apex about 2 mm broad.
        - a. The black marginal band of the forewing equally broad. *L. afra.*  
*L. alberta.*
        - b. Marginal band of the forewing towards the anal angle gradually tapering off. *L. amanica.*
    - ††. Wings beneath of a light, whitish-grey ground-colour. Discal cell of the hindwing with or in the ♂ often without a basal spot. ♂. Forewing above as far as the margin rather light violettish-blue. ♀. Both wings above with distinct black discal spots and a large central spot. *L. definita.*
- β. The basal spot in the area 7 of the hindwing is always distinctly prominent, blackish-red, rounded, punctiform and encircled by a light ring.
- \*. ♂. Hindwing beneath with 1 or 2 basal dots or basal spots in the discal cell.
- §. ♂. Wings above at least in the basal part distinctly blue.
  - †. ♂. Wings above as far as or almost as far as the margin dark violettish-blue, at most with a fine, black marginal line.
    - o. At least one of the basal dots of the hindwing beneath filled up with red or red-brown.
      1. Only the discal spots 7 and 1 b of the hindwing filled up with red. *L. rubrimaculata.*
      2. All the discal spots beneath more or less completely filled up with red. *L. hobleyi.*
      3. The discal spots beneath not filled up with red, of the ground-colour. *L. lemnos.*  
*L. loa.*
    - oo. The three basal dots of the hindwing beneath filled up with black.
      1. Discal spots of hindwing beneath of the ground-colour. *L. indefinita.*
      2. Discal spots of hindwing beneath more or less filled up with dark, especially that in area 7. *L. sylvanus.*
  - ††. ♂. Wings above only at the base blue or at least with a broad black marginal band of the forewing. *L. millari.*  
*L. otacilia.*
  - §§. ♂. Wings above uni-coloured brown without blue.
    - a. Hindwing beneath only in area 2 with a black marginal spot. *L. minima.*
    - b. Hindwing beneath with one black, yellow-ringed marginal spot each in 2 to 5. *L. gemmifera.*
- \*\*.
- ♂. Hindwing beneath without a spot in the discal cell.
  - §. ♂. Forewing above as far as the margin dark violet or bluish, at most with a fine black marginal line.
  - †. The discal spot 7 of the hindwing is like the other discal spots large and angular, not or slightly darker than the latter.

1. The marginal dot in area 2 of the hindwing proximally bordered with hemochrome.  
*L. smithi.*
2. The marginal dot in area 2 of the hindwing proximally bordered with yellow or reddish-yellow.
  - a. Basal dot in area 7 of the hindwing filled up with red. *L. bihé.*
  - b. Basal dot in area 7 of the hindwing filled up with black. *L. liodes.**L. nigropunctata.*
- ††. The discal spot 7 of the hindwing is entirely like the basal spot of the same area rounded, punctiform and decidedly darker and more distinctly prominent than the other discal spots.
  1. Both the basal dot and discal dot of area 7 of the hindwing filled up with red. *L. lasti.*
  2. Both dots of area 7 of the hindwing filled up with black. *L. princeps.*  
*L. uganda.*
- §§. ♂. Forewing above at the apex and generally also at the costal and distal margins broad black.
  - †. Hindwing above at the margin in area 2 with a black dot proximally bordered with orange or reddish.
    1. Discal spot in area 7 of the hindwing large and angular, not punctiform and not darker than the other discal spots. *L. livida.*
    2. Discal spot in area 7 of the hindwing, entirely like the basal spot of the same area, rounded, punctiform and decidedly darker and more distinctly prominent than the other discal spots. *L. lunulata.*  
*L. sanguinea.*
  - ††. Hindwing above without any reddish-yellow or yellow spots at the margin. Discal spot 7 of hindwing angular, not punctiform. *L. levis.*
11. Forewing beneath at the base in area 1 b broadly filled up with black; the black colour almost reaches the middle of the discal cell. Frons white with two black lines of bristles. Hindwing only with two hair-tufts (at the end of the veins 1 b and 2), beneath with 4 black, white-ringed dots after each other in area 7. *L. amarah.*

The ♀♀ are not only above, but, strange to say, also beneath often very different from the ♂♂. In many cases they are not yet or insufficiently known and it is therefore not possible for me to give a review of them. As a rule, the ♀♀ differ above by a grey or greyish-brown ground-colour without any blue or with a great reduction of the blue or violet colours. And moreover, both wings, or at least the forewings, are often above in the centre lighter whitish. The under surface is generally much lighter than in the ♂, with smaller, more separate or partly absent spots.

*musagetes.* **L. musagetes** Holl. (72 a). Both wings above as far as the margin dark bluish-violet, without markings; fringes blackish, hair-tufts white. Wings beneath brown without basal spots; central spot and discal spots angular, bordered with white, not or slightly darker than the ground; hindwing with three black marginal dots proximally bordered with orange-red and decorated with some bluish scales, one each in 1 b, 1 c and 2; that in 2 much larger than the others. ♀ unknown to me. Sierra Leone to Angola and Uganda.

*anadema.* **L. anadema** Ham. Druce (71 b) only deviates from *musagetes* by the discal spots of the areas 1 b and 7 of the hindwing filled up with red and the fringes above light brown with white tips. ♀ unknown. North West Rhodesia.

*itura.* **L. ituria** B.-Bak. (71 c) has a reddish-brown under surface and all or almost all the discal spots of the hindwing filled up with orange-red; it otherwise agrees with *musagetes*. ♀ unknown. In the interior of the Congo District near Beni, Makala and Mavambe.

*rubricincta.* **L. rubricincta** Holl. (72 a) is described as a ♂, but is probably a ♀. Wings above monotonously dark brown; hindwing between the proximal margin and vein 6 with a yellow, about 4 mm broad marginal band enclosing 6 small, black marginal dots and only separated from the fringes by a very fine dark line. Wings beneath brownish grey, at the base unmarked as far as the central spot; discal spots angular, scarcely darker than the ground-colour; marginal spots in 1 c and 2 proximally bordered with reddish-yellow. Ogowe River.

*voltæ.* **L. voltæ** Em. Sharpe (71 b). Sexes quite different. ♂. Forewing above blackish with a light violettish-blue anal-marginal spot covering the base of the areas 1 a to 2, extending little beyond the middle of the anal margin and being anteriorly rounded off; hindwing above entirely light violettish-blue with a narrow, black marginal band being at the apex expanded to about 2 mm. Wings beneath whitish-grey; central spot and discal spots bordered with dark, scarcely darker than the ground-colour; discal spots broad and angular; hindwing only with a basal dot (in 7); at the margin with very small dots proximally not being bordered with yellow in 1 b, 1 c and 2. In the ♀ the wings above are white; forewing at the costal margin (as far



as the cell) narrowly, at the apex very broadly blackish-grey; the blackish-grey marginal part is about 7 mm broad at the apex, but quickly narrows down posteriorly and terminates at the anal angle almost in a point; hindwing with a dark grey marginal band about  $2\frac{1}{2}$  mm broad, enclosing an undulate, white submarginal line. Under surface purely white with the same markings as in the ♂; all the spots, however, of the same colour as the ground and very indistinctly defined; the basal dot in area 7 of the hindwing seems to be absent. Sierra Leone, Ashanti, and Uganda. — **gabunica** *Auriv.* deviates from the typical ♀ by the marginal band of both wings being much broader, about 5 mm broad and the hindwing being above at the costal margin dark grey as far as vein 6. Gabun. *gabunica*

**L. arescopa** *B.-Bak.* (71 c). ♂. Forewing above black with a small light-blue anal-marginal spot being anteriorly rounded and covering neither the cell nor the base of area 2; hindwing above light silvery blue, towards the proximal margin whitish, at the costal margin as far as vein 6 black; the black costal-marginal band is continued at least as far as vein 4 as a submarginal band; the under surface almost entirely agrees with that of *voltæ* (in the original figure, however, there is in the discal cell a basal spot not being mentioned in the description). In the ♀ the wings above are dark brown with a white central area of the forewing and the basal part of the hindwing from vein 6 to the proximal margin is likewise white. Cameroon, on the Ja-River. It might be possible that this species is identical with *gabunica*. BETHUNE-BAKER in his work gives an incorrect description of *gabunica*. *arescopa*.

**L. lithas** *Hew.* (71 c, ♂ upper surface as *lunulala*). ♂. Forewing above blackish with a light blue basal spot covering the discal cell and the greatest part of the areas 1 a and 1 b, but leaving free area 2; hindwing above light blue with a small black apical spot and a fine black marginal line; wings beneath of a greyish white ground-colour and large, broad discal spots; hindwing with a black basal dot in area 7 and small, black, blue-scaled submarginal dots proximally bordered with reddish-yellow in 1 c and 2. The ♀ is above brown, in the middle of the forewing behind the cell a little lighter whitish and with 4 black spots at the margin in the anal region of the hindwing. Sierra Leone and Ashanti. *lithas*.

**L. thyrsis** *Kirby* (71 d). The ♂ differs above from that of *lithas* only by the blue colour of the forewing covering also the basal part of area 2; the under surface deviates by the marks mentioned in the review as well as by the larger marginal spots proximally bordered by thick orange bows in the areas 1 c and 2 of the hindwing; the basal spot in area 7 of the hindwing is dull and rather indistinct, neither black nor punctiform. The ♀ is above blackish-brown with a triangular white area of the forewing between the veins 1 and 4 and with two black submarginal dots in the areas 1 c and 2 of the hindwing. Fernando Po, Gabun, French and Belgian Congo. — ab. ♀ **unicolor** *ab. nov.* Both wings above uni-coloured dark brown without markings; it seems to be the most common form of the female. Though BETHUNE-BAKER cites HEWITSON's figure of the ♀, he only mentions the form *unicolor* in his description. *thyrsis*. *unicolor*.

**L. leonina** *B.-Baker* is unknown to me. The description runs as follows: „♂. Both wings dark brown; hindwing with a leaden reflection in and behind the discal cell and with 4 or 5 dark marginal spots proximally bordered with light. Both wings beneath dark brown with light-bordered spots; forewing with a spot at the cell-end and one above it; discal band broad, the third and fourth spots (presumably = discal spots 4 and 5) united placed towards the margin, the fifth nearer at the base, the sixth larger and more towards the base, and the seventh (= discal spot 1 b) very large and much nearer at the base; marginal part whitish with a row of bent streaks between the veins; hindwing with a basal dot in area 7 and one at the proximal margin; a spot at the cell-end; the discal band begins and ends right before and behind the spot at the cell-end; the second spot (= discal spot 6) is situate a little distally, the third and fourth (= discal spots 5 and 4) united and still more towards the margin, the fifth and sixth small, both more proximally, the seventh and eighth (= discal spots 1 b and 1 c) angular and still more towards the base; marginal part broad whitish parted by a bossed line; a black dot in area 2 and at the anal angle, both proximally bordered with yellow and with some lustrous scales. Expanse 32 mm. — The ♀ is quite brown; I possess, however, a specimen from Busoga with a white discal area of the forewing and a bent submarginal stripe of the hindwing.“ Sierra Leone to Uganda. *leonina*.

**L. brunnea** *Smith & Ky.* (71 d, c). The ♂ is unknown. In the ♀ both wings above and beneath monotonously dark brown; forewing above without markings; hindwing above with black marginal dots surrounded by white in 1 c, 2 and 3; forewing beneath with very broad discal spots; the proximal bordering of the discal spot 1 b almost reaches the base of vein 2; hindwing beneath only with one basal dot which is black and situate in area 7; discal spot 7 black, punctiform and much darker than the other discal spots which are scarcely darker than the ground-colour; marginal spots almost as above, but somewhat smaller and proximally narrowly bordered with yellow. The species is particularly distinguished by the marginal spot in area 3 on both surfaces of the hindwing. Ogowe River. *brunnea*.

**L. mimetica** *Ham. Druce* (71 c, d). This species is likewise only known in the female which approximates that of *voltæ* (71 b). Wings white; forewing above at the costal margin as far as the discal cell, at the *mimetica*.



apex and distal margin very broad blackish-brown, the marginal band at vein 6 almost reaches the apex of the discal cell, but posteriorly it gradually grows narrower and at the anal margin it is hardly more than 2 mm broad; hindwing above with a dark brown marginal band of about 3 mm width, enclosing 7 (two in 1 c and one each in 2 to 6) triangular, black marginal spots finely encircled with white; fringes brown. Both wings beneath with a light brownish marginal band proximally irregularly bordered, enclosing the discal spots or at least reaching them; the discal spots are situate nearer at the margin than usually, those of area 1 b of the forewing and of the areas 1 b and 1 c of the hindwing, however, much farther towards the base than the others; discal spot 7 of hindwing small, black, punctiform; hindwing with a minute basal dot in 1 a and 7. Cameroon, near Bitje on the Ja-River.

*chirinda*. **L. chirinda** B.-Bak. (71 d). ♂. Both wings above dark violettish-blue with a very fine black marginal line, beneath grey with spots finely bordered with white, which are scarcely darker than the ground-colour; the discal spots 2 to 6 of the forewing form a coherent, feebly bent band, discal spot 1 is placed more towards the base and entirely separated from the discal spot 2; hindwing with two rather indistinct basal spots, one in 1 a, one in 7, and two black marginal dots proximally bordered with reddish-yellow in 1 c and 2. ♀. Wings above brown with a broad white spot of the hindwing, beneath of a white ground-colour. Gazaland in the forest of Chirinda; Cape Colony and Kilima-Ndjaru; East Sudan: Wau. — The ♂ is very much like that of *definita* (71 e) and only differs by the darker under surface.

*pauperula*. **L. pauperula** Strand (72 a). STRAND described this form as an aberration of *ukerewensis* which only differs from the typical form by the absence of the basal spot in the discal cell of the hindwing. BETHUNE-BAKER considers *pauperula* to be a form very closely allied to *chirinda*, only deviating by a somewhat differently shaped discal band of the forewing. German East Africa on the shore of the Victoria-Nyanza.

*ligures*. **L. ligures** Hew. (= *emolus* Mab.) (71 f). ♂. Wings above as far as the fine dark marginal line dark violettish-blue; hindwing close in front of the margin with a black transverse streak or two dots in area 1 e and one dot in 2. Spots beneath not darker than the brown ground-colour, finely bordered with greyish-white; the discal spots 2 to 7 of the forewing form a coherent, slightly bent transverse band, the discal spot 1 b, however, is situate so far towards the base that its distal border-line coincides with the proximal one of the discal spot 2. Hindwing beneath with three basal spots (in 1 a, 7 and the discal cell) which are neither punctiform nor darker than the ground, and with three black marginal spots scaled silvery blue and encircled by reddish-yellow in 1 b, 1 c and 2; the spot in 2 is larger than the others, the reddish-yellow bordering of which is continued like a streak to the end of vein 1 a. The ♀ is above light brown, at the margin of the hindwing with a broad whitish band enclosing two dark lines, and with black marginal spots in area 2 and at the anal angle; under surface white with the same markings as in the ♂. In the whole of West Africa from Sierra Leone to Angola and to the east as far as Nandi and the Kilima-Ndjaru. — **amanica** Strand. Of this form which STRAND at first regarded to be *liodes*, two specimens are before me from the Kilima-Ndjaru; the one entirely agrees with STRAND's description, and I therefore do not doubt that he has had such a specimen before him. The other is above somewhat different and forms a transition to the type. It therefore follows that *amanica* is a race of *ligures*. Beneath it entirely corresponds with *ligures* except the discal spot 1 b of the forewing being situate much nearer at the margin, and above it only differs by both wings showing a black marginal band; this marginal band is about 2 mm broad at the apex of the forewing, gradually tapering off towards the anal angle and forming at the apex of the hindwing a spot which covers the greatest

part of area 6, though it is very narrow there; German East Africa: Amani and Kilima-Ndjaru. — **liguroides**; Strand (72 a) is unknown to me, but it is described, as follows: „Different from the typical form by its smaller size (expanse of wings 25, length of wings 14 mm); the discocellular spot of the forewing is not so far distant as its shorter diameter from the postmedian band, the said band is scarcely broken and generally scarcely noticeable behind the vein 2; the hindwing beneath shows a grey round spot in the basal area at the costal margin, which, however, is only recognizable by the light inclosure; the bands following then are much more prominent than in *ligures*, because their inclosure is lighter; antennal club below mostly light reddish.

*ukerewensis*. Abyssinia, near Eli. — **ukerewensis** Strand I place here only temporarily. The ♀, according to BETHUNE-BAKER, belongs to *ligures*, the ♂, however, he united with *lemnus*. STRAND, however, states that this determination is quite incorrect. According to the description, the ♂ differs from that of *ligures* by the hindwing above showing a brown marginal band of 3 mm width. German East Africa. — **albicans** Grünb. deviates by the purely white ground-colouring beneath. Sesse Islands.

*afra*. **L. afra** B.-Bak. (71 c). The ♂ only differs above from *ligures* by both wings above being broad black at the costal margin as far as the discal cell and at the distal margin; the under surface differs only by the basal spots of the hindwing being much smaller and rounded. ♀ unknown. Cameroon and in the Congo District near Makala.

*alberta*. **L. alberta** B.-Bak. (71 d) is also very much like the two preceding species and only differs from *afra* by the darker brown under surface, the broader discal spots and the position of the discal spot 1 b of the forewing; the latter is situate more towards the margin, so that its distal light border-line touches the middle of the discal spot 2. ♀ unknown. Congo; Angola, Uganda, and on Lake Albert-Edward.



**L. ruwenzorica** Grünb. is evidently closely allied to the two species mentioned last and may be identical with *alberta* (71 d) originating from the same district. The description does not suffice in order to decide this question; it runs as follows: „Allied with *L. ligures* Hew. and *ukerewensis* Strand. ♂. Wings above with an intense dark violet reflection, with a narrow, distinct, jet-black marginal band, being expanded to triangular spots at the anal angle of the hindwing in the areas 2 and 1 c; marginal scales and small tails of the hindwings light greyish-brown; ground-colour beneath light brownish-grey, bands and distal margin darker greyish-brown with a distinct ferruginous tinge; markings similar as in *ligures*, but more diffuse, the dark bordering only faintly traceable, the light borders neither much developed; discal band in the forewing as far as vein 2 more rectilinear, less interrupted; the light-bordered basal dots in the hindwing indistinct or quite diffuse; anal spots in the hindwing light ferruginous, the black pupilled spots separated from the margin, rather small, strewn with lustrous blue scales. — ♀: upper surface (somewhat rubbed off) dull blackish-brown, without a black marginal band; marginal scales whitish; in the hindwing between the veins 1 b and 6 a narrow white line before the margin, a whitish submarginal band only faintly traceable; the triangular black marginal spot in area 2 proximally indistinctly bordered with yellow; under surface white with a greyish-brown marking, being especially in the hindwing quite faded; the yellow anal spots pale and faded, the black pupilled spots distinct. Length of forewing: ♂ 15 to 17, ♀ 15 mm; expanse of wings: ♂ 27 to 30½, ♀ 28 mm.“ Lake Albert Edward and Ruwenzori. *ruwenzorica.*

**L. definita** Btlr. (= *nigrocaudata* Pag.) (71 e). BUTLER in 1899 gave this name to the species which TRIMEN described and figured at first as *emolus* (1866) and then as *liodes* (1887). In spite of this, BETHUNE-BAKER in his Revision placed TRIMEN's species to *liodes* Hew. and not to *definita*, which must of course be incorrect. *definita* is a species closely allied to *ligures* (71 f) and distinguished by the light whitish under surface and the distinctly marked upper surface of the ♀. ♂. Wings above dark violettish-blue with a fine black marginal line and generally with black basal dots or streaks in 1 c and 2 of the hindwing; under surface light whitish, so that the white border-lines of the central and discal spots often disappear altogether; the discal spots 3 to 6 and 8 form a coherent, almost straight band, and the spot in 2 is also placed slightly more towards the base; the spot in 1 b, however, is narrow and placed so far proximally that it does not touch the spot 2; hindwing with a dull brown basal spot in area 7 and also in the cell with such a spot which, however, is often quite indistinct or even not at all noticeable; at the margin in 1 b, 1 c and 2 one black, blue-scaled dot each, bordered with reddish-yellow. The ♀ deviates from all the other ♀♀ of *Lycaenesthes* known to me by both wings above showing distinctly defined, quadrangular, black spots (central spot and 4 to 6 discal spots); both wings above light whitish grey with a light bluish reflection being more intense towards the base; costal margin as far as the discal cell and an about 2 mm broad marginal band blackish; the marginal band is on the hindwing and in the areas 1 b and 2 of the forewing often parted by an undulate white line; under surface almost as in the ♂, but with a distinct basal spot in the discal cell. In South and East Africa from Cape Colony to British East Africa and Uganda. — TRIMEN describes the pupa to be above light yellowish-green, beneath much paler lustrous whitish green, semi-transparent; on the dorsum a fine dark median line exhibiting at the border between the thorax and abdomen a distinct, salmon-coloured spot surrounded with brown. *definita.*

**L. rubrimaculata** Strand (72 a, b). „Above blackish-brown, at the base with some bright blue scales (the specimens not excellently preserved!), marginal line black, at the margin of the hindwing in area 2 a round, jet-black spot proximally bordered with orange and behind it another black, transversely placed, indistinct, proximally not orange spot. Under surface whitish-grey with indistinct grey markings bordered with whitish, mainly consisting only of lines indicating the contours of the usual spots and bands; the transverse band is removed far towards the margin and at the veins 2 and 4 so sharply broken that the proximal side of the preceding part almost coincides with the distal side of the following. At the margin a grey band of 1½ mm width, which is parted by a white transverse line being interrupted at the veins and situate the nearest to the proximal margin of this band. Marginal lines on both wings distinctly marked, brown. On the hindwing are most remarkable three bright orange-red or hemochrome, distinctly marked subbasal spots being situate in a transverse row feebly curved towards the margin, the anterior one of which is about 1¾ mm distant from the base of the wing and 2 mm distant from the following spot, whilst the two posterior ones are 2½ mm distant from each other. A similarly coloured, though larger and quadrangular spot is at the costal margin 5 mm distant from the base, and at the middle of the proximal margin a slightly more distinct, similarly coloured oblique spot, both spots forming the ends of the very indistinct transverse band. The grey markings are similar as on the forewing and all rather indistinct and irregular. The part of the margin on the hindwing bearing the three hair-pencils is most characteristically somewhat extended (prolonged), so that the middle of the black, greenish scaled eye-spots being situate there and proximally bordered with orange is on a level with the margin of the areas 3 and 4. Expanse of wings 24, length of wings 13 to 14 mm.“ A ♀ before me certainly belongs to this species. Wings above blackish-brown; forewing not marked; hindwing at the margin between the veins 1 b and 6 with two fine white lines enclosing black marginal spots, the marginal spot in area 2 larger and proximally bordered by a thick, orange bow; under surface purely white; the white bordering of the spots has therefore vanished, and the discal spots are often only indicated by their distal dark bordering; *rubrimaculata.*



the small basal dots as well as the discal spots in 1 b and 7 of the hindwing is filled up with red. German East Africa near Amani. — BETHUNE-BAKER declares this species to be identical with *lasti* (71 g); but if the basal spot in the discal cell of the hindwing is at any rate reliable as a characteristic mark of the species, STRAND is correct in separating *rubrimaculata* from *lasti*.

*hobleyi*. **L. hobleyi** Neave (71 e). ♂. Both wings above as far as the margin dark violettish-blue with a fine, black marginal line; hindwing with black dots or transverse streaks at the margin in 1 c and 2; wings beneath dark grey with distinct discal spots more or less filled up with red or bordered with red, and three red, distinctly prominent, white-encircled basal dots of the hindwing (in 1 a, 7 and the discal cell); marginal spots in 1 b and 2 of the hindwing as usually proximally bordered with red; both wings with a reddish marginal line. In the ♀ the wings above are very broad black at the costal and distal margins; hindwing above in 2 with a marginal spot bordered with reddish-yellow; under surface lighter than in the ♂. British East Africa and Uganda.

*lemnos*. **L. lemnos** Hew. (71 e, f). ♂. Wings above lustrous violettish-blue, with a fine dark marginal line, beneath greyish-brown with discal spots bordered with white, which are not or only slightly darker than the ground-colour; only the discal spot 7 of the hindwing is often filled up with dark; hindwing with three basal dots (in 1 a, 7 and the discal cell), all of them or at least the two anterior ones being filled up with red-brown, chestnut or dark brown; black, green-scaled marginal dots proximally bordered by reddish-yellow as usually in 1 c and 2. In the ♀ the blue colour of the forewing above only reaches to the apex of the discal cell and the centre of area 2; hindwing as far as the middle light blue, then very extensively white with a black submarginal line and black marginal spots of which that in 2 is proximally bordered with orange; under surface much lighter than in the ♂, but with the same markings. Natal to British East Africa and Uganda. —

*loa*. — **loa** Strand seems to me to be a form of *lemnos* at most, evidently being somewhat variable. STRAND writes about *loa* which he at first described as *lemnos*: „The original description of *lemnos* at first sight differs by the two anterior subbasal spots of the hindwing being light red, whereas in my specimens the anterior spot is entirely or at least for the greatest part black, the other being more or less reddish or brownish; besides the hindwing beneath at the margin only exhibits one black spot proximally encircled by red, whereas my form exhibits besides one or two such spots in the anal angle.“ In addition to this we remark that the basal dots of the hindwing in HEWITSON's figure are undoubtedly too glaringly coloured (in the text HEWITSON calls them only „rufous“) and that the black marginal dots at the anal angle are variable in many species of *Lycaenesthes* (HEWITSON says in the text, that there is a yellow bordering, which is absent in the figure). I should therefore regard *loa* as the form of *lemnos*, in which only one of the basal dots of the hindwing is reddish or brown. German East Africa.

*indefinita*. **L. indefinita** B.-Bak. (71 e) only differs in the ♂ from the species mentioned last by the marks stated in the review, and cannot always be sharply distinguished from *lemnos*. The ♀, according to BETHUNE-BAKER, has the wings above brown; forewing behind the cell and vein 3 light blue; hindwing with the radial part as far as the margin light bluish with a distinctly prominent black submarginal band and a black spot proximally bordered with dark yellow in area 2, both wings beneath white, but with the same markings as in the ♂. The figure does not exactly agree with this description, the hindwing above being broadly whitish in the marginal part without any yellow bordering of the marginal spot in area 2, but with distinct black discal dots in 2 to 5; on the under surface the basal dots in 1 a and in the cell are absent. STRAND regards the ♀ *bigamica*. to be another species and denominates it **bigamica**. British East Africa; Uganda; Ruwenzori.

*sylvanus*. **L. sylvanus** Dr. (74 f). This long-known species being widely distributed in West Africa is recognizable by the three basal dots of the hindwing being filled up with black and by the discal spots beneath being distally more or less filled up with tan or dark brown. The discal spots 2 to 6 of the forewing form a coherent, almost straight transverse band; the spot in 1 b, however, is situate so much farther towards the base, that it does not touch the spot in 2 or only with its anterior angle. In the ♀ both wings above are dark blackish-grey; the forewing sometimes lighter in the centre, the hindwing between the veins 1 b and 5 or 6 with a fine white submarginal line and in 2 with a black marginal spot proximally bordered with yellowish; under surface of a pure white, so that the white border-lines of the spots disappear altogether; the basal dot in the cell is very small or absent, and of the discal spots usually only the dark (black) filling remains. Sierra Leone to Angola. — Larva green and visited by ants.

*millari*. **L. millari** Trim. (71 f). ♂. Forewing above blackish-grey, the discal cell and the basal part of the areas 1 a and 1 b dusted light blue; hindwing above still lighter blue with a black costal-marginal band reaching the cell and vein 6, and a marginal band about 1½ mm broad enclosing the usual white submarginal line and the black marginal spots; the marginal spot in 2 not bordered with yellow; both wings with a black transverse streak at the end of the discal cell. The under surface light grey with distinct discal spots situate in 2 and 3 near the cell. Hindwing with three dark basal dots (in 1 a, 7 and the discal cell) and the usual marginal spots proximally bordered with yellow in 1 b, 1 c and 2. ♀ unknown. Natal.



**L. otacilia** Trim. (= *dulcis* Pag.) resembles *millari*, but above it differs by the dark marginal band of the hindwing being broader and enclosing a white submarginal line; under surface darker, greyish brown, only between the discal spots and the submarginal line whitish. ♀ above light brownish, with or without a bluish reflection at the base. From Cape Colony to Uganda. — **kikuyu** B.-Bak. deviates by the blue colour above being more extensive, so that the forewing only shows a black marginal band of 2 to 3 mm width. British East Africa, near Kikuyu.

**L. suquaia** Pag., according to BETHUNE-BAKER who examined the badly preserved typical specimen, is closely allied to *otacilia*. The species is described by the author, as follows: „Size of *amarah*; all the wings above with a deep dark brown reflection with a blackish margin and white fringes; the hindwing exhibits a black eye-spot proximally bordered with yellowish-red. Both wings beneath grey; the forewing shows four dark brown stripes of spots surrounded with whitish, the hindwing the same and at the costal margin with two black dots and between the upper and median small tail with a black spot proximally surrounded with orange and distally exhibiting small silvery light scales; a similar small spot is situated at the posterior small tail; before the grey, distally darker fringes a blackish marginal band.“ Whosoever has been occupied with species of *Lycaenesthes*, will at once find that this description is insufficient for the determination of the species, since it fits just as well to several species. As there is not even a statement whether the hindwing beneath has a basal spot in the discal cell or not, I do not know whether the species has to be placed near *otacilia* or *liodes*. Abyssinia: Suquala.

**L. minima** Trim. (71 f) is a small species different from all the allied forms by both wings above being uni-coloured dark brown without any blue; spots beneath not darker than the ground-colour, rather indistinct; hindwing with 3 or 4 black basal dots. The ♀ on the hindwing above shows a white submarginal line, but otherwise it scarcely differs from the ♂. Expanse of wings: about 22 mm. Natal to Rhodesia.

**L. gemmifera** Neave (72 b) differs from all the other species of *Lycaenesthes* by the hindwing showing also at the ends of the veins 4 and 5 short hair-tufts and on the under surface 4 equally large black marginal spots scaled greenish and encircled by reddish-yellow (in the areas 2 to 5). Wings above uni-coloured blackish-brown, somewhat bronze-coloured. Wings beneath dark brown with blackish markings bordered with white and arranged as is usual in this group of species. BETHUNE-BAKER places the species to his genus *Neurellipes*. Rhodesia.

**S. smithi** Mab. (71 g). ♂. Wings above uni-coloured light bluish-violet with a fine dark marginal line; under surface rather light brownish-grey with central and discal spots bordered with white, all of which are not or but slightly darker than the ground-colour and angular; hindwing with a basal dot filled up with blue (or black) in area 7, and black, green-scaled marginal dots in (1 b), 1 c and 2; the two latter or at least that in 2 proximally bordered by a *hemochrome* spot. In the ♀ the wings above are blackish-brown; forewing with an indistinctly defined, violet bluish anal-marginal spot reaching to vein 4, but covering only a part of the cell; hindwing at the base scaled bluish and at the margin violettish-blue with a dark submarginal line and a black spot in area 2. Madagascar.

**L. bihé** B.-Bak. (71 g). ♂. Wings above dark violettish blue with a black costal margin and marginal band of the forewing and a black marginal spot proximally bordered with reddish-yellow in area 2 (and 1 b) of the hindwing; costal margin of hindwing as far as vein 7 black; under surface rather light grey, with darker, very distinct discal spots bordered with whitish, all of which are angular and arranged in a sharply broken transverse row; hindwing with a basal dot filled up with red in area 7 and a black one in 1 a; marginal dots almost as above. ♀ unknown. Angola.

**L. liodes** Hew. has frequently been mistaken for other species. BUTLER, who examined the typical specimen from Gabun, lays stress upon the following differences from *definita* Btlr. (71 e) (= *liodes* Trim.): „ground-colour more golden bronze than in *definita* and the markings beneath more brown; in the forewing the discal band is divided into three almost equally broad and almost equally sized parts being contiguous with their angles, whereas in *definita* the two anterior parts are combined into a coherent band; behind the costal vein of the hindwing there is near the base a sharply defined black dot with a white ring; in *definita* the hindwing is without the black spots at the costal margin.“ In addition we may copy HEWITSON's description: ♂. Wings above dark violettish-blue with a narrow dark brown marginal band and white fringes; hindwing with two or three black dots distally bordered with bluish white near the anal angle; under surface greyish-white; both wings with a spot at the cell-end, and somewhat behind the middle with a discal band composed of spots and two submarginal bands, all of which are light greyish-brown; hindwing with a black dot at the base and at the anal angle with two black dots proximally bordered with orange and dusted with some silvery scales. Sierra Leone to Angola (and Nyassaland?).

**L. nigropunctata** B.-Bak. (71 g) is very closely allied to *L. liodes* and chiefly only differs by the much darker slate-coloured under surface and the upper surface being of a bright violettish-blue as far as the margin.



Discal spots beneath all angular and scarcely darker than the ground-colour; hindwing only with a basal dot (in 7) filled up with black; marginal dots above black, beneath proximally bordered with reddish-yellow. Rhodesia and Kigonsera in German East Africa.

*tisamena*.

**L. tisamena** Holl. (71 h as „*ticamenus*“) is unknown to me, but according to BETH.-BAKER's figure it must be placed near *liodes*. BETH.-BAKER places the species to his genus *Triclema*. HOLLAND describes the species as follows: wings above uni-coloured dark violet, beneath with a light reddish-grey ground-colour. Forewing beneath right behind the discal cell with a dark transverse band which is interrupted between the median veins and on both sides bordered (the figure shows that this „transverse band“ consists of the central spot at the cell-end and of the discal spot of area 1 b); then follows a broader and darker transverse band from the costal margin to vein 2 and finally a narrow, brown submarginal line; fringes dark brown. Hindwing beneath with two dark brown, almost black, somewhat triangular spots at the costal margin, one at the end of the discal cell (indistinct in the figure) and one near the middle of the proximal margin; these spots are in the marginal half accompanied by dark nebulous spots being towards the margin bordered with light; the submarginal line of the hindwing is continued on the hindwing and in the area 2 and at the anal angle expanded to red, black-pupilled spots; fringes like on the forewing. Palpi and abdomen beneath white. Ogowe River.

*lasti*.

**L. lasti** Sm. & Ky. (71 g). ♂. Both wings above as far as the margin dark violettish-blue; hindwing at the costal margin as far as vein 7 blackish and with black marginal dots in 1 b and 2. Under surface light grey with distinct discal spots bordered with white, of which at least those in 1 b and 7 of the hindwing are filled up with red and that in 7 is rounded; hindwing with red, white-curved basal dots in 1 a and 7; marginal spots of the hindwing in 1 b, 1 c and 2 proximally broadly bordered with reddish-yellow. The ♀ is above brown with a white area in the centre of the forewing and a similar antemarginal stripe of the hindwing. Gazaland, Rhodesia, German and British East Africa.

*princeps*.

**L. princeps** Btlr. (= *neglecta* Trim.) (71 h). ♂. Wings above as far as the distal and costal margins light bluish violet with a distinct brownish or almost coppery lustre; an extremely fine dark marginal line; sometimes a black marginal dot in area 2 of the hindwing; under surface rather light grey with distinct, somewhat darker discal spots bordered with white, forming on the forewing four divisions (the spots in 1 b, 2 and 3, 4 and 5, 6 and 8); discal spot 7 of the hindwing filled up with dark, more or less rounded off, rarely somewhat angular; a basal dot filled up with black in area 7 and sometimes also in 1 a. In the ♀ the wings above are brown, only at the base a little dusted with blue; forewing sometimes in 1 b, 2 and 3 indistinctly brighter and the hindwing at the margin more or less whitish; beneath entirely like in the ♂. Distributed from Sierra Leone to Natal and Abyssinia. — **L. uganda** B.-Bak. differs by the wings above being greyish-violet with a fine black marginal band and a narrow black costal-marginal band of the forewing; beneath ashy grey, between the discal band and the submarginal line whitish. Uganda.

*livida*.

**L. livida** Trim. (72 g) ♂. Forewing above blackish-brown with a blue basal area covering at most the discal cell and the greatest part of the areas 1 a, 1 b (and 2); a black transverse spot at the cell-end; hindwing above at least as far as the middle blue with a black transverse streak at the cell-end and in the marginal part more or less white with marginal spots proximally bordered with yellow in 1 b and 2. Under surface light grey with darker discal spots and a basal dot filled up with black in area 7. The ♀ is rather similar to the ♂, though paler, the upper surface light blue. Cape Colony to Abyssinia.

*lunulata*.

**L. lunulata** Trim. (= *hewitsoni* Auriv.; *grosei* Auriv.) (71 c as *lithas* upper surface, f, g, h). ♂. Forewing above with a violettish blue reflection, at the costal margin as far as the discal cell and at the apex broadly blackish-brown and then with or without a dark marginal band; hindwing likewise violettish-blue, at the costal margin as far as vein 6 broadly black, at the distal margin narrowly black or only with a fine dark marginal line, in area 2 always with a black marginal spot proximally very broadly bordered with reddish-yellow; under surface grey with slightly darker spots bordered with white; the discal spots of the forewing form three divisions (in 1 b, 2 and 3, 4 to 8); the discal spot in area 7 of the hindwing is rounded, jet-black, or more or less covered with lustrous red scales; hindwing with two black or red scaled basal spots, one in 1 a and one in 7; marginal spots of the areas 1 b, 1 c and 2 proximally broadly bordered with reddish-yellow. In the ♀ the blue colour above is brighter and of a purer blue, but much less extensive, on the forewing it often only forms a stripe in 1 b; beneath like in the ♂. A rather common species distributed from Sierra Leone to Angola, Mashonaland and Mombasa in British East Africa.

*sanguinea*.

**L. sanguinea** B.-Bak. (71 h) is very closely allied to *lunulata* and apparently differs only by the whitish ground-colour beneath. Angola and Rhodesia.

*levis*.

**L. levis** Hew. (71 i) is a small, very distinct species which, to a certain extent, approximates the species of the following group. ♂. Forewing above black, in the discal cell and in the areas 1 a and 1 b almost as far as the margin of a bright violettish blue; hindwing in the discal cell and in the areas 1 e to 5 as far as the 2 mm broad marginal band likewise bright violettish-blue; thus at the costal margin as far as vein 6 black; marginal band with two very fine bluish lines enclosing the marginal spots which are not bordered with reddish-yellow; under surface dark grey with spots bordered with white; the discal spots scarcely



darker than the ground-colour, but often at their distal sides filled up with blackish in the shape of spots or dots, precisely the same as in many species of the following group; hindwing with two black basal dots (one in 1 a, one in 7) and at the margin with black dots proximally bordered with reddish-yellow in 1 b, 1 c and 2. In the ♀ the wings above are monotonously dark grey with 1 to 3 fine, white transverse lines at the margin of the hindwing and a black marginal spot not being bordered with yellow in 2; under surface as in the ♂. Sierra Leone to Rhodesia.

**L. amarah** Guér. (72 b). In my opinion, this small species is the most deviating from among all the *amarah*. African species. Frons white, above with two rows of black bristles; hindwing at vein 3 without a hair-tuft; marking beneath quite different. ♂. Both wings above as far as the proximal margin, costal margin and distal margin light grey with a distinct, brass-coloured or coppery lustre and a very fine dark marginal line; hindwing with a fine white marginal line and a black marginal spot in 2 proximally slightly bordered with yellow; also in 1 c a smaller similar spot; under surface light grey with white discal and central spots bordered with dark grey and white; forewing at the base of area 1 b almost as far as the middle of the cell jet-black; discal spot 2 very broad, so that it touches at vein 2 the submarginal streak of area 1 b; the discal spot 1 b also broad, but removed more towards the base; hindwing beneath with 7 jet-black dots surrounded by white, one basal dot each in 1 a, 1 c, the cell, and 7, a smaller one at the base of vein 8, a discal dot and a submarginal dot in 7; besides the hindwing shows the usual, black, silvery green scaled marginal dots in 1 b, 1 c and 2; the latter are proximally only faintly bordered with yellow; the discal white border-lines of the discal spots 2 to 4 are united with the proximal white border-lines of the submarginal streaks of the same areas, forming quadrangular white spots. The ♀ is above brown without a metallic lustre with two white transverse lines in the marginal part of the hindwing and a much thicker reddish-yellow bordering of the marginal spots; beneath almost as in the ♂. Everywhere on the African Continent from Sierra Leone to Cape Colony and Abyssinia.

### Third Group of Species.

The species of this group either entirely agree in the structure of the veins with the species of the two first groups or they deviate by vein 8 being absent and vein 11 being fused with 12. They are always recognizable by the forewing beneath showing distinct markings in the basal part.

The marking beneath being often quite complex and apparently entirely irregular, is in fact traceable to the following fundamental marking which is distinct in *larydas* Cr. (71 h): 1. The basal spots or basal dots being situate in the basal part within the rise of the vein; 2. the central spot at the end of the discal cell; 3. the discal spots forming a more or less bent, often very irregularly broken or interrupted transverse row from the anal margin or proximal margin to the costal margin in the areas 1 b to 6, 8 (and 10 to 11) of the forewing and 1 a to 7 of the hindwing; the discal spots in 10 and 11 of the forewing are, if they are at all present, small and naturally removed towards the base, so that they are situate between the costal margin and the central spot; 4. the submarginal streaks (or submarginal spots) often forming together a dark submarginal line or submarginal band; and 5. the marginal spots or marginal dots.

All these markings are darker than the ground-colour or at least as dark as it, and on both sides (proximally and distally) bordered with white, or if they are punctiform, encircled by a light ring; this white bordering of the spots or streaks I call the proximal and distal border-line. The distal border-line of the submarginal streaks usually serves at the same time as a proximal border-line of the marginal spots. In case the spots are entirely of the ground-colour, only the white border-lines are prominent and the marking beneath seems to appear as an entirely strange marking. But in order to be able to understand and to make use of the following review of the species, it is necessary to ascertain the identity of the white border-lines and always to compare the marking with that of *larydas*.

In this group I must likewise confine the review of the species to the ♂♂.

With respect to the following review I must remark yet that the marking in the basal part of the forewing always only consists of two angular basal spots, a quadrangular one in 1 b and an often almost triangular one in the discal cell; these spots are either situate in such a way that their proximal border-lines form together angles, or in most of the species so that these border-lines form an entirely straight, slanting line; also the distal border-lines in this case form a straight, less slanting line, and both spots together a jet-black triangle bordered with white. The marking in the basal part of the hindwing originally consists, as in *larydas*, of 5 (or 6) black, more or less rounded and thus independent spots, one each in 1 a (1 b), 1 c and 7 and two close together in the discal cell. In most of the species, however, these basal spots are united forming a straight, jet-black transverse stripe on either side bordered by a straight white line.

### Review of the ♂♂.

- I. The basal spots of the hindwing beneath are more or less separated and never form a straight, coherent transverse band; the spot in area 7 almost invariably separated and rounded.

- A. Basal spots of forewing and their border-lines together form a distinct angle (rarely the spot in 1 b is absent).
- α. Wings above as far as the margin very dark bluish-violet. Under surface brownish-grey; the basal spots and the discal spots 4, 5 and 7 of the hindwing more or less filled up with black, distinctly darker than the ground-colour.
- \*. Forewing beneath with a basal spot in area 1 b. *L. larydas.*
- \*\*. Forewing beneath without a basal spot in area 1 b. *L. abrupta.*
- β. Wings above rather light bluish violet. Beneath lighter grey; the spots not or scarcely darker than the ground. *L. crawshayi.*
- B. Basal spots of forewing situate right behind each other, so that their border-lines form straight lines.
- α. Basal spot in 1 b of forewing not broader than that in the cell; both therefore form an equally broad transverse band. Both wings above bluish-violet. *L. parallela.*
- β. Basal spot in area 1 b of forewing much broader than the basal spot in the cell, which is anteriorly pointed; both therefore form a large triangle with straight sides and straight or almost straight white border-lines. — Forewing generally only with 10 veins, vein 11 being for a short distance fused with vein 12.
- \*. Forewing above for the greatest part violettish-blue or at least with bluish-grey, small spots. Hindwing beneath with a jet-black, green-scaled marginal spot in area 3. Proximal border-line of the marginal spots complete.
1. Both wings above almost as far as the margin of a bright violettish-blue reflection with a black costal margin; forewing also with a posteriorly tapering black marginal band. *L. coerulea.*
2. Forewing above blackish with several, small, separate, greyish-blue spots; hindwing with two such transverse lines in the marginal part. *L. lamias.*
- \*\*. Forewing above blackish without any blue, sometimes with a grey submarginal line or with a yellow discal spot. Hindwing beneath in area 3 only with a small marginal streak. The proximal border-line of the marginal spots is absent in 1 b and 2.
- §. Wings above blackish without light markings. *L. hades.*
- §§. Forewing above with a brownish-yellow discal spot. *L. phoenicis.*  
*L. marshalli.*  
*L. rufoplagata.*
- §§§. Both wings above with a grey or whitish submarginal line.
1. Wings beneath with a brown ground-colour. *L. kamilila.*
2. Wings beneath with a grey ground-colour. *L. nigeriae.*
- II. The basal spots of the hindwing beneath are so completely united into a straight or almost straight, jet-black transverse line or band on both sides bordered by an almost straight white border-line, that the single spots are not to be noticed; this basal transverse band does not reach the costal margin, but it ends at vein 8.
- A. Forewing above more or less extensively blue or violet or decorated with such spots and lines.
- α. Hindwing beneath at the costal margin in area 8 between the proximal border-line of the basal band and the proximal border-line of the submarginal band white. Forewing above with a dark violettish-blue anal-marginal spot reaching at least vein 2. Hindwing beneath in area 3 without a marginal spot bordered with red and scaled metallic.
- \*. Hindwing above in the centre with a large dark violet spot covering the areas 2 to 5 and only leaving free a marginal band of about 3 mm width. The distal border-line of the basal spot of the discal cell and the proximal border-line of the central spot at least in the forewing separated. The base of the areas 2 and 3 entirely or almost entirely filled up with white. The proximal border line of the submarginal band of the forewing at the costal margin not expanded like a spot. *L. lachares.*
- \*\*. Hindwing above only with a dark blue submarginal stripe between the veins 2 and 5. *L. versatilis.*
- β. Hindwing beneath not white at the middle of the costal margin. The distal border-line of the basal spot and the proximal one of the central spot in both wings at least anteriorly united into a white spot or transverse streak.
- \*. Wings above with a blue or violet area forming on the forewing an anal-marginal spot or anal-marginal stripe, whilst on the hindwing it covers a larger or smaller part of the base and of the centre.



§. The distal border-line of the basal spot and the proximal one of the central spot at least on the hindwing only anteriorly united and posteriorly separated. The proximal border-line of the submarginal band of the hindwing at the costal margin in 6 or 7 or in both expanded into a spot. Forewing with 11 veins, vein 11 being separate. *L. lysicles.*

§§. The distal border-line of the basal spot and the proximal one of the central spot completely united into one spot. Forewing only with 10 veins, also vein 8 being absent.

1. Both wings above with a reflecting dark violet area, on the forewing at the anal margin, on the hindwing in the centre. Vein 11 of forewing for some distance fused with vein 12.

*L. fasciata.*

*L. obscura.*

2. Only the forewing above with a dark violet anal-marginal stripe; hindwing above unicoloured blackish-brown with two fine white lines at the margin. *L. staudingeri.*

\*\* . Both wings above with numerous, bright blue transverse lines and rings. The distal border-line of the basal spot and the proximal one of the central spot in both wings united into a broad, almost square spot in the discal cell. The border-line of the submarginal band of the hindwing in 6 and 7 expanded like a spot. Forewing with only 10 veins. *L. lucretilis.*

B. Forewing above without any violet or blue areas and markings, or in case there is a slight violet reflection, with a yellow discal spot.

α. Forewing above without a yellow spot or yellow stripe, at most in 1 b and 2 indistinctly lighter yellowish.

\*. Hindwing above at least in area 2 with a distinct reddish-yellow bow as the proximal bordering of the marginal spot. The distal border-line of the basal band and the proximal one of the central spot at least in the forewing entirely separated. Forewing with 11 veins.

1. Hindwing above without a yellowish-red submarginal bow in 1 c and 3. Central spot of forewing beneath filled up with black. *L. lychnides.*

2. Hindwing above also in 1 e and 3 with a black marginal spot proximally bordered with yellowish-red. Central spot of forewing beneath of the ground-colour. *L. rufomarginata.*

\*\* . Hindwing above without any yellow markings. Forewing with 10 or 11 veins.

§. The white border-lines of the under surface are very broad and united, so that the ground-colour is almost entirely removed and the under surface appears white with distantly separated black spots and transverse lines. *L. lamprocles.*

§§. The white border-lines of the under surface of the usual width. The ground-colour therefore appears as usually.

1. The black markings beneath distinctly show through above.

a. Forewing above without yellowish spots. *L. lyzanius.*

b. Forewing above in 2 with one and in 1 b with two small angular, indistinct, yellowish spots. *L. flavomaculata.*

2. The dark markings beneath do not show through above.

*L. lacides.*

*L. inconspicua.*

β. Forewing above more or less extensively orange or at least with a round or elliptic yellow spot in 1 b (and 2).

\*. Hindwing above blackish without a yellow spot, but often with whitish or bluish transverse lines before the margin.

§. Ground-colour of hindwing beneath entirely or almost entirely removed by the expanded and confluent white border-lines. Forewing above between the veins 1 and 3 with a large, round yellow spot. *L. xanthopoeila.*

§§. Ground-colour of hindwing beneath distinctly prominent between the fine border-lines in the usual places.

o. Forewing beneath without the lighter yellowish area in 1 b near the anal angle. The yellow spot of the forewing above is only situate in area 1 b or it penetrates little into area 2.

a. The proximal border-line of the submarginal band of the hindwing beneath at the costal margin in 6 and 7 expanded into a white spot. *L. kampala.*

b. The proximal border-line of the submarginal band of the hindwing beneath as far as the costal margin narrow and fine. *L. maeander.*

- oo. Forewing beneath with a more distinct lighter yellowish area in 1 b (and 2) near the anal angle. *L. lusones.*
- \*\* . Hindwing above almost entirely orange or with a yellow area or at least with a transverse row of yellow spots.
- §. The arrangement of the discal spots and of the other markings beneath as in all the preceding species of this group. The discal spots do not form a coherent dark transverse band; the discal spot 1 b of the forewing is situated at or before the middle of area 1 b and is more or less broadly separated from the discal spot 2.
- o. Hindwing above only at the margin orange. Forewing above with the veins 1, 2 to 4, 6 and 7 bordered with yellow and besides in area 2 at the base and margin more or less yellow. The proximal border-line of the central spot and the distal one of the basal spot in both wings separated. *L. radiata.*
- oo. Hindwing above in the centre more or less extensively orange. Veins of forewing not bordered with yellow.
- †. Hindwing above only with a narrow yellow discal band formed of spots of the areas 1 c to 4. The proximal border-line of the central spot and the distal one of the basal spot in both wings united into a white spot in the discal cell. *L. bitje.*
- ††. Hindwing above at least with a large yellow central area, often almost entirely orange.
- ×. Forewing above at the costal margin at least as far as the discal cell and vein 6 broad black; the black marginal band at least  $1\frac{1}{2}$  mm broad and posteriorly not narrowed.
- +. Hindwing above with an orange central area covering the basal part of the areas 2 to 5 and the apex of the cell, but without yellow markings at the margin. Border-lines beneath expanded and united, pale yellow, not white; spots black. *L. locuples.*
- ++. Hindwing with an orange central area and similar marginal band which are either separated by a black line or almost entirely united. The marginal band with black marginal dots in all or nearly all the areas.
- . Border-lines purely white, very broad, forming a white ground on which the black spots are distinctly prominent. Discal spots 2 to 6 of forewing all black, forming a coherent band. *L. erythropoecila.*
- . Border-lines as usually for the greater part separate. Discal spots 2 to 6 of forewing not in a coherent row and not all coloured the same.
1. The reddish-yellow area of the forewing above is rounded, and the black marginal band therefore much broader towards the apex of the wing. *L. leptines.*  
*L. makala.*
2. The reddish-yellow area of the forewing above is very large, towards the apex of the wing extended, so that the marginal band is almost equally broad. *L. mahota.*
- ××. Forewing above almost entirely reddish-yellow with a fine, black marginal line and a fine black costal-marginal band.
- +. The black costal-marginal band of the forewing above equally broad, about 1 mm broad; the marginal band posteriorly tapering. The black costal-marginal band of the hindwing above is broadly continued at the distal margin as far as vein 4. *L. lychnaptes.*
- ++. The black costal-marginal band of the forewing above very narrow and in the middle entirely or almost entirely interrupted; that of the hindwing posteriorly bordered by vein 6.
1. Apex of forewing above 2 to 3 mm broad black. *L. pyroptera.*  
*L. leptala.*
2. Apex of forewing above only very finely black. *L. scintillula.*  
*L. aurea.*



§§. The discal spots of both wings are united into a coherent, more or less bent, almost entirely margined discal band extending from the costal margin to the posterior margin resp. proximal margin. The discal spot 1 b of the forewing is situate behind the centre of its area. The distal border-lines of the basal spots and the proximal ones of the discal spots are on both wings united to a large, snow-white spot of the posterior margin or central spot. Moreover both wings, between the discal band and the submarginal band, show one or two white areas formed by the union of the distal border-lines of the discal spots and the proximal one of the submarginal band.

1. The discal band of the hindwing is almost straight and it only coheres with the submarginal band at the costal and proximal margins; between the bands there is thus only one large, oblong white spot situate in 1 b to 5. *L. zenkeri*.
2. The discal band of the hindwing is distally bent in the area 2, where it touches the submarginal band. Thereby the white spot between the band is divided into two spots. *L. juba*.

Of *L. oculata*, *melambrota* and *bakeri* only the ♀♀ are known; for this reason they could not be introduced into the review.

In order to avoid repetitions of the description of the single species, we supply here a detailed description of the marking beneath exhibited in nearly all the species. In the single species we then only need to mention the differences from the typical marking. For examination purposes we may recommend *L. larydas* (71 h) representing a more original stage, and *L. lusones* (72 e) in which the marking is particularly clear and distinct.

Forewing: at the base as far as the proximal border-line of the basal spots the ground-colour is spotless or with a white line at the costal margin and another one in the basal angle of the cell (*larydas*). Between the distal border-line of the basal spots and the proximal ones of the central spot and of the discal spot 1 b the ground-colour reappears and covers the base of area 2. The proximal border-line of the central spot, however, is often expanded and more or less united with the distal border-line of the basal spot, forming a white spot in the discal cell. The proximal border-lines of the central spot and of the discal spot 1 b are situate in a straight line, but they are normally separated from each other by the ground-colour of area 2. Then follows a straight or almost straight white transverse line, being parallel to the last mentioned lines between the veins 1 and 6 or 10, which is formed by the distal border-line of the discal spot 1 b, the proximal border-lines of the discal spots 2 and 3, the distal border-line of the central spot and sometimes also by the proximal extreme point of the discal spot 8 and the distal one of the discal spot 10. I call this line the white discal line; at vein 1 it is often united with the proximal border-line of the submarginal streaks. Then follows a somewhat slanting, more or less bent white line, the white postdiscal line which unites at vein 2 with the proximal border-line of the submarginal streaks and is composed of the distal border-lines of the discal spots 2 and 3 and the proximal border-lines of the discal spots 4 to 6 and 8. The distal border-lines of the discal spots 4 to 6 (to 8) form a coherent or almost coherent white subapical line usually uniting at vein 4 with the proximal border-line of the submarginal streaks. This border-line is always distinct and coherent and is denoted as the white submarginal line; between it and the white subapical line almost invariably, also in species in which the ground-colour is otherwise almost entirely removed, the ground-colour appears as a dark band of the areas 4 to 6. At the margin there extend two more white lines, the distal and proximal border-lines of the marginal streaks or marginal dots.

Hindwing: The marking of the hindwing beneath in fact entirely agrees in its arrangement with that of the forewing. The ground-colour is uni-coloured at the base or it has a white dot or transverse streak and a white stripe at the costal margin. Then follow the white-edged basal dots, being either separate or combined to a transverse band; their distal border-line is sometimes quite separate and narrow or expanded and more or less completely united with the proximal border-line of the central spot, forming a white spot in the cell. The proximal border-line of the discal spots 1 b and 1 c is always angularly broken at vein 1 b and anteriorly directed towards the proximal border-line of the central spot, but entirely, as in the forewing, separated from it by the ground-colour of area 2. The distal border-lines of the discal spots 1 b and 1 c, the proximal ones of the discal spots 2 and 3, the distal border-line of the central spot and the proximal border-lines of the discal spots 6 and 7, like in the forewing, form a coherent or almost coherent white discal line which, however, is not straight, but more or less serpentine. Then follows a white postdiscal line which, however, is often somewhat interrupted at the veins 4 and 6, and which is composed of the distal border-lines of the discal spots 2 and 3, the proximal ones of the discal spots 4 and 5 and the distal ones of the discal spots 6 and 7. The distal border-lines of the discal spots 4 and 5 form a white transverse streak usually touching the white submarginal line at the veins 4 and 6; between this line and the distal border-lines of the discal spots the ground-colour almost invariably appears in the shape of dark streaks or spots. The white submarginal line is often expanded at the costal margin in 6 and 7 in the shape of a spot. The proximal of the two white marginal lines almost invariably consists of distally open bows and is sometimes entirely absent or at least in the areas 1 b to 2, where it is represented by the reddish-yellow bows of the marginal spots. The hindwing, in case it be not stated otherwise, exhibits 3 jet-black, rounded or elliptical marginal dots strewn with lustrous light green or silvery blue scales in 1 b, 1 c and 2, that in 2 being the largest and that in 1 b the smallest; the two dots in 1 b and 1 c are close together, so that they are only separated by vein 1 b; each of the three are proximally more or less completely bordered with reddish-yellow.

If a figure of the under surface is not magnified and not so reproduced that the veins are distinctly prominent and the position of the spots can be exactly ascertained, it is impossible to use it for a distinct separation of the species. The old figures, for instance those of HEWITSON, are often hardly serviceable with regard to the under surface, nor are many of the modern ones sufficient in order to see many of the important marks. As I could not examine several species myself, I was therefore unable to use the marking beneath in the review of the species in such a way as it undoubtedly deserves.

**L. larydas** Cr. (71 h) ♂. Both wings above uni-coloured dark bluish violet with an extremely fine *larydas*. black marginal line. Under surface brownish-grey with similarly coloured spots and fine, separated border-lines; the basal spot 1 b of the forewing is more closely situate at the base than the basal spot in the discal cell, so that the border-lines together form a distinct angle; the white discal line is somewhat irregular and slightly interrupted at vein 2; the marking is otherwise normal. Hindwing below with 4 rounded, separate basal spots filled up like the discal spots 4, 5 and 7 with more or less deep black; the white discal line is



not quite normally developed, but often somewhat irregular or interrupted in the areas 1 c to 3; the white submarginal line is in the typical form fine and separate. The ♀ is above blackish-brown without a violet reflection with a grey brightening in the areas 1 b to 3 of the forewing and three whitish transverse lines in the marginal part of the hindwing, the two proximal ones of which are formed of bows; a jet-black marginal spot in area 2; the under surface is almost like in the ♂ but with thicker border-lines. Common and distributed *kersteni*, from Sierra Leone to Natal and Uganda. — **kersteni** Gerst. only differs by its lighter upper surface with more diaphanous spots from beneath and by its somewhat lighter under surface with thicker border-lines; the white submarginal line is often more or less united with the distal border-lines of the discal spots. In the ♀ the brightening of the forewing above is whitish. It chiefly occurs in South and East Africa.

*abrupta*. **L. abrupta** Gaede. „Upper surface agreeing with that of *larydas* Cr. (71 h); on the forewing beneath in *larydas* the white marginal line of the first basal double spot is distally almost rectilinear, proximally beginning from the middle bent inwards; in *abrupta* the proximal line terminates on the median vein, the distal line forming a small bow distally somewhat above the median vein and ending on this vein; the whole lower part of the basal spot is thus absent; the central spot between vein 1 and vein 2 is in *larydas* bordered with white like the others, in *abrupta* there is only a brown, pointed spot without a light marginal line; the marginal spot following then between vein 1 and vein 2 is in *abrupta* not bordered proximally, but only separated from the central spot by the light ground-colour; hindwing like in *larydas*. Expanse of wings: 25 mm.“ Described according to a single specimen. As the only difference between this form and *larydas* is the formation of the spots in area 1 b on the forewing beneath, we may suspect it to have been founded upon an abnormal specimen in which the development of the marking of this area has been impeded. Cameroon, in the Yaunde District.

*crawshayi*. **L. crawshayi** Btlr. (71 h) is easily recognizable by the quite different colour of the ♂ above; beneath it entirely agrees with *larydas*, but it shows smaller basal spots on the forewing, which, however, are situated in the type precisely like in *larydas*. The ♀ is dull grey, with bluish scales at the bases of both wings. Sierra Leone to Uganda. — ab. **parallela** ab. nov. agrees above with the type and only differs beneath by the marks stated in the review. As some specimens of the typical form approximate *parallela*, it is probably only a form of *crawshayi*. German East Africa.

*coerulea*. **L. coerulea** Auriv. (71 i) ♂. Expanse of wings: 22 mm; palpi beneath with bristly scales; wings above rather light violettish-blue; forewing with a black costal margin and black marginal band tapering off towards the posterior angle; hindwing at the costal margin as far as the discal cell and vein 6 black, at the margin with a fine marginal line proximally bordered with white, and with black spots or streaks in 1 c to 5. Under surface dark brown with somewhat darker spots and fine white border-lines; the white discal line of the forewing at the veins 2 and 4 somewhat interrupted, the proximal border-lines of the discal spots 2 and 3 being situated somewhat more towards the base than the distal border-lines of the discal spot 1 b and of the central spot; basal spot 7 of the hindwing more or less angular, entirely separated from the semicircular basal spot of the discal cell; the proximal border-line of the discal spot 5 touches in front the centre of the discal spot 6, whereby the white postdiscal line is here entirely interrupted; a black, green-scaled marginal spot is also in area 3 and it is only bordered with reddish-yellow towards vein 3. In the two specimens lying before me the forewing only shows 10 veins and vein 11 is for a very short distance united with vein 12. The ♀ is unknown. Cameroon.

*lamias*. **L. lamias** Hew. (71 i). The ♂ differs from all the other species by the marking above described in the review; the spots of the forewing often show an oblong dark pupil; of these spots there are on the forewing 4 in area 1 b, 3 in 2, one each in 3 to 6, one on the terminal vein of the discal cell and a fine longitudinal streak in 1 a. Wings beneath dark grey with black or blackish spots and thick, partly united border-lines; forewing quite normally marked; hindwing with almost united basal spots, the basal spot in 1 a, however, separate and rounded off and that in 7 also somewhat rounded and more or less slanting; in the discal cell the distal border-line of the basal spot and the proximal one of the central spot are united into a white, quadrangular spot; the white submarginal line is in 4 and 5 completely or almost completely united with the distal border-lines of the discal spots; the ground-colour appears as transverse streaks or transverse lines chiefly only in area 7 between the basal spot and the discal spot, in area 6 between the discal spot and the white submarginal line, in the areas 4 and 5 between the central spot and the discal spots and in the areas 1 b and 1 c between the basal spots and the discal spots; at the margin there is a black, green-scaled spot in area 3 and dark marginal streaks between the white marginal lines in 4 to 6. In the ♀ the wings above are uni-coloured brown with two indistinct white lines or rows of bows before the margin of the hindwing and blackish marginal dots in 1 c to 3; the under surface like in the ♂, but with broader border-lines, whereby the ground-colour is still more removed. Sierra Leone to the Ogowe River.

The three following species are evidently very closely allied. I am unfortunately not able to ascertain the differences from the descriptions and figures by BETHUNE-BAKER, particularly because the descriptions do not agree with the figures. In the description, for instance, he says that the hindwing above shows a black marginal spot in area 2, which also agrees with my specimens, but in the figure the hindwing exhibits a fine, coherent, black marginal line distally bor-



dered with white. Moreover, BETHUNE-BAKER says in the description of *L. marshalli* that it differs from *phoenicis* by the discal spots 1 b and 1 c of the hindwing being filled up with a quite dark colour, whereas in *phoenicis* they are entirely of the ground-colour; in the figures, however, they are in both species almost equally dark. In specimens lying before me from Cameroon, which I consider to be *phoenicis*, they are also distinctly darker than the ground-colour. On the other hand, the figures exhibit differences, e. g. on the hindwing above, which are not mentioned in the descriptions. If we could rely upon the figures, we might easily distinguish the three species, as follows:

- A. Hindwing above at the margin without black markings, in 1 c with a fine white marginal line. *L. hades*.
- B. Hindwing above at the margin with black spots or a black transverse line.
  - α. Hindwing above between the proximal margin and vein 6 with a fine, black marginal line distally bordered with white. *L. phoenicis*.
  - β. Hindwing above in the areas 1 c to 5 with separate, black, proximally rounded marginal spots. *L. marshalli*.

**L. hades** (71 i) ♂. „Both wings monotonously dark brown, forewing with an indistinct dark spot at the cell-end and an equally broad dark, bent submarginal line extending from the costal margin to the posterior margin and not running parallel to the margin (in the figure it is parallel to the margin). Under surface: both wings dark brown with slightly darker spots finely bordered with white; forewing with a broad, wedge-shaped basal spot, an oblong spot at the cell-end, before which there is a small spot at the costal margin; the discal band is irregular, the discal spots 6 and 7 are united, 6 larger than 7, 4 and 5 still larger and closer at the margin, 4 more towards the margin than 5, 3 and 2 removed towards the base, posteriorly touching the central spot, 2 larger than 3 and somewhat more towards the base, the discal spot in 1 b is slanting so near to the base that it almost touches the basal spot; a bent, rather broad submarginal line showing through above, and a fine dark marginal line. Hindwing with the basal band divided into two parts; the anterior part is almost oviform, the posterior part irregular, at the posterior margin of the discal cell broken and behind strangulated; an oblong central spot; discal band irregular; the discal spots 6 and 7 united, 7 larger and darker than 6, 4 and 5 united and situate much more towards the margin, 3 very small, removed much more towards the base, 2 larger, with its proximal side touching the central spot; the discal spots in 1 c and 1 b together form an angle and are removed so far towards the base that they almost touch the basal band; a bent submarginal band; four small, almost crescentiform, blackish marginal spots in 4 to 7; a black marginal spot in 2 strewn with lustrous metallic blue scales and proximally bordered with orange, and a similar spot at the anal angle.“ Sierra Leone.

If these differences are maintainable, the specimens lying before me from Cameroon must be inserted in *hades* from which, however, they differ by the black marginal spot in area 2 of the hindwing above.

All three species are probably only forms of a somewhat variable species. But as I cannot decide upon this question at present, I must confine myself to repeating the original descriptions of the three forms.

**L. phoenicis** Karsch (71 i). „Shape, size and habitus entirely as in *Triclema lucretilis* Hew., but the wings are above uni-coloured dark brown without the neat, blue scaled rings of *lucretilis*, the under surface of the wings is not of a dark brown ground colour, but greyish-brown, and the light bands which make the ground-colour appear to be divided into narrow, unequally broad transverse areas, are not so brilliantly white as in *lucretilis*; on the forewing beneath two anteriorly convergent white transverse streaks enclose towards the base a dark brown triangular area, which is then followed distally at first by a greyish-brown, narrow transverse area, then a greyish-brown transverse area crossing the centre of the wing and being darkened before and behind the middle, hereafter beyond the centre a narrow transverse area exhibiting two dark brown spots in the middle, then another transverse band being broad at the costal margin and exhibiting a dark brown spot between the upper radial (vein 6) and lower radial (vein 5) and the 3rd median branch (vein 4) and tapering off at the 1st median branch (vein 2), finally towards the margin beside the narrow, blackish marginal line another narrow, but behind the 1st median branch somewhat broader, darker brown proximal transverse area and a very narrow, greyish-brown distal transverse area. In the hindwing towards the base two large, dark brown spots distally and proximally narrowly bordered with white, the anterior between the costal (vein 8) and subcostal (vein 7), the posterior beginning behind the subcostal and extending somewhat strangulated to the anal margin, then at the costal margin a smaller spot, on the centre two spots next to each other and beyond the centre two more between the 2nd (vein 3) and 1st median branch (vein 2); between the latter and the submedian (vein 1 b) dark brown spots extending strangulated tail-like to the anal margin; all the spots are proximally and distally accompanied by irregular narrow white transverse strokes; between the 2nd and 1st median branches and on the submedian (here parted by the vein being scaled red at the end) there is one large, blackish-brown spot each, exhibiting metallic blue scales and being proximally margined with red; neither is this spot absent in *lucretilis*, but it is not margined with red there.“ Sierra Leone to Uganda and Rhodesia.

**L. marshalli** B.-Bak. (71 i). ♂. „It differs from *phoenicis* Karsch by the under surface which is browner, with very dark brown basal spots on both wings; in KARSCH'S species they are of the ground-colour, i. e. grey;



all the spots are filled up more with brown, and the discal spots in 1 b and 1 c of the hindwing are quite dark in *marshalli*, whereas in *phoenicis* they are entirely of the ground-colour." Sierra Leone and Nigeria.

*rufoplagata*.

**L. rufoplagata** B.-Baker (71 k) beneath almost entirely agrees with *L. phoenicis*, but above it deviates by the forewing exhibiting in the centre a large, rounded brownish-yellow spot covering the base of the areas 2 and 3 and the adjoining parts of area 1 b and of the discal cell, as well as a black streak at the cell-end. In specimens from the Congo District the hindwing exhibits two fine whitish lines at the margin of the hindwing above. Sierra Leone and Congo District.

*kamilila*.

**L. kamilila** B.-Bak. (71 k). ♂ and ♀. Wings above blackish-brown with a grey or whitish submarginal line and rather indistinct dark marginal spots; forewing with an indistinct dark central spot. Under surface coffee-brown with darker, normally arranged spots broadly bordered with white; the basal spots, the central spot and the discal spots 1 b to 5 of the forewing and 1 b, 3, 4 and 7 of the hindwing are filled up with a blackish colour; the white submarginal line of the hindwing is in the areas 3 to 7 expanded into quadrangular spots. Sierra Leone and Nandi Land.

*nigeriae*.

**L. nigeriae** Auriv. (72 b). ♂. The second palpal joint is below coarsely haired; forewing above monotonously blackish-grey with a black streak at the end of the discal cell and a fine black marginal line; a whitish submarginal line is only distinct in the areas 1 b to 3; close in front of the margin there are feeble traces of two light lines; hindwing at the base blackish, in the centre grey-haired; the black marginal line is immediately proximally accompanied by a complete white line, followed by white bows in the areas 1 b, 3, 4 and 5, and by a black spot in area 2; then follows a whitish submarginal line being distinct in the areas 2 to 5; fringes at the base white, then grey; the small hair-tassels are whitish; the marking beneath is almost normal and is clearly evident from the figure; the white submarginal line of the hindwing is fine and almost equally broad. Expanse of wings: 19 mm. Nigeria near Lokoja.

*oculata*.

**L. oculata** Sm. & Ky. (72 b). Of this small species with an expanse of only about 17 mm only the ♀ is known. According to BETHUNE-BAKER, the species has only 10 veins on the forewing and is placed by him to the genus *Triclema*. Both wings above brown; forewing without markings, hindwing with a white submarginal line and black marginal spots which are on both sides bordered with white; the marginal spots in 2 and 3 are large, jet-black and distinct. On the under surface the border-lines are completely flown together forming a white ground on which the spots and the proper ground-colour appear as dark transverse stripes (forewing) or fine transverse lines (hindwing). Hindwing with large marginal spots bordered with reddish-yellow in 2 and 3. Ogowe River.

*lachares*.

**L. lachares** Hew. (♀ = *liparis* Gr.-Sm., ♂ *pulcher* Sm. & Ky.) (71 k). ♂. Wings above blackish-brown with a large, semi-transparent central spot with a dark violet reflection; this spot covers on the forewing the greatest part of area 1 b, more than half of 2 and the base of area 3, on the hindwing, however, the areas 2 to 5, except a broad marginal band; the forewing has at the end of the discal cell an indistinctly defined, yellowish spot which, however, may often be entirely absent, ab. **obsolescens** B.-Bak. The under surface is blackish-grey or blackish with broad border-lines which are more or less united, whereby the marking beneath becomes very variable; the distal borderline of the basal band and the proximal one of the central spot are in some specimens quite separate, in others, at least in the hindwing, completely united; the distal border-lines of the discal spots and the proximal border-line of the submarginal band are sometimes quite separate, leaving free a narrow bent band of the ground-colour, sometimes more or less united. In the ♀ (71 k) both wings above are dark brown; forewing generally with an oblong, yellowish spot in area 2; hindwing with a white marginal line, whitish antemarginal bows and traces of a light submarginal line and sometimes also with a yellowish postdiscal spot; the under surface is white owing to the border-lines being united, the dark markings of the ♂ are very much reduced, and the ground-colour removed in quite a normal way. The larva is green, before the pupation reddish, it lives on the under surface of the leaves of its food-plant and is sedulously visited by ants of the genus *Pheidole*. Sierra Leone to Gaboon.

*obsolescens*.

*versatilis*.

**L. versatilis** B.-Bak. (71 k). ♂. It evidently approximates *lachares* very much and differs from it above by the forewing exhibiting only one violettish-blue longitudinal stripe in area 1 b and the hindwing a dark blue transverse stripe in the areas 2 to 4. On the under surface the border-lines are confluent and the markings very similar to those of *lachares*. ♀ unknown. Gaboon.

*buchholzi*.

**L. buchholzi** Plötz. „The upper surface of the ♂ is of a plain bluish black, that of the ♀ blackish-brown with an oviform orange spot at some distance from the posterior margin and posterior angle of the forewing; at the margin of the hindwing there are in the cells 1 and 2 one fine blue streak each, and in cell 2 an orange lunula turned towards it. The under surface is very similar to that of *L. larydas*, but it is remarkably distinguished from it by the costal margin of the forewing being white at the base and the oblique white line beside it, as well as by the two eye-spots at the margin of the hindwing being inwards bordered with orange.“ „Forewing 13 to 14 mm.“ Cameroon, near Victoria. — Although the description is insufficient



for ascertaining the species, I am still convinced that it must be identical either with *L. lachares* or *lysicles*. This question can only be solved by examining the typical specimen in the Greifswald Museum. BETHUNE-BAKER wrongly translated the description of the ♂ and thereby made it unintelligible.

**L. melambrota** Holl. (72 c) is a small species of which hitherto only one specimen (♀?) is known. The *melambrota*. description says: upper surface blackish with a bluish reflection; hindwing with grey fringes; a narrow black marginal line is proximally bordered by a similarly fine white line and then a series of black-pupilled grey eye-spots. Under surface white decorated with light grey and black confused markings; at the margin on both wings a series of black-pupilled eye-spots with white rings or in the areas 2 and 3 of the hindwing with reddish-yellow wings; the eye-spots are in both wings proximally bordered by a dark brown line. French Congo: Ogowe.

**L. lysicles** Hew. (71 k). ♂. Wings above blackish; forewing with a lustrous dark blue longitudinal *lysicles*. stripe in 1 a and 1 b; hindwing with a triangular blue spot at the posterior margin of the discal cell and at the base of the areas 2 and 3, with a broad blue submarginal band between the veins 2 and 4 and a fine blue or white marginal line from vein 1 b to vein 4. Under surface dark blackish-grey with similarly coloured or partly darker spots (the discal spots 1 b, 1 c, 4, 5 and 7, as well as the central spot and the basal spot of the hindwing are often almost black) and moderately broad border-lines; area 3 of the hindwing beneath without an eye-spot at the margin; the white discal and postdiscal lines of the forewing are almost quite straight. The ♀ is above uni-coloured dark brown with a fine white marginal line and bow and an indistinct submarginal line of the hindwing; under surface like in the ♂, but with broader border-lines. Sierra Leone to Gaboon.

**L. fasciata** Auriv. (= subnitens B.-Bak.) (72 c). ♂. Wings above blackish; forewing with a dark *fasciata*. violettish-blue reflection on the discal cell and a broad stripe of the posterior margin in 1 a and 1 b at least as far as the centre of vein 2; hindwing with a large, triangular, similarly coloured area covering the discal cell and the areas 1 c to 5 as far as about 2 mm from the margin, and with two such fine, indistinct lines at the margin. Under surface blackish-grey with normally developed separate border-lines and slightly darker spots; only in the discal cell the distal border-line of the basal spot is united with the proximal one of the central spot; the discal spots 2 to 5 on the forewing, and 1 b, 1 c, 2 to 5 and 7, as well as the central spot on the hindwing are more or less filled up with black; hindwing only with one complete eye-spot (in area 2), those in 1 b and 1 c being minute or absent and without the reddish-yellow border. In the ♀ the wings above are blackish-brown with a bent whitish submarginal line formed of spots or streaks, and the hindwing besides with the usual two light marginal lines. The under surface only differs from that of the ♂ by the border-lines of the discal cells being separate or almost separate and by the white submarginal line of the hindwing forming a spot in area 6. Expanse: 19 to 21 mm. Palpi below in the ♂ almost smooth, in the ♀ with bristly scales. Sierra Leone to the Congo District.

**L. obscura** Ham. Drc. (72 b). The ♂ is very similar to that of *fasciata* (72 c) and apparently differs *obscura*. only by the darker, more monotonously blackish under surface and the finer border-lines of it; the white submarginal line of the hindwing in area 6 expanded into a spot. ♀ unknown. Cameroon near Bitje.

**L. staudingeri** Sm. & Ky. (72 c). ♂. Wings above blackish-brown; forewing with a dark blue posterior- *staudingeri*. marginal stripe in the basal part of 1 a and 1 b; hindwing only with two fine light marginal lines. The under surface is blackish with fine, but in some places expanded or united border-lines; on both wings there is in the discal cell near its apex a white spot which has been formed in the usual way by the united border-lines; the white submarginal line, which is otherwise very fine or even interrupted, forms a white spot at the costal margin on both wings in the areas 6 and 7; eye-spots of the hindwing like in *fasciata* and *lucretilis*, that in area 2, however, proximally not bordered with red, only with a white bow. This species is evidently closely allied on the one hand with *fasciata* on the other with *lucretilis*, and it does not seem to me to be natural to separate it from them generically. In the only specimen lying before me (from Sierra Leone), moreover, vein 11 is distinctly fused with vein 12 for some distance! In the ♀ the wings above are brown with a whitish submarginal line of the forewing, the under surface being lighter. Sierra Leone to the Congo District.

**L. lucretilis** Hew. (72 c). In the ♂ the wings above are black with numerous fine, bright blue transverse *lucretilis*. streaks and transverse lines corresponding to the border-lines of the under surface; by this marking the species differs at once from all the other hitherto known species. The under surface is almost black with fine border-lines and it is quite similar to that of *staudingeri*; the discal cells by the fusion of the border-lines with a white spot and the white submarginal line at the costal margin (particularly on the hindwing) expanded into a spot; the red border of the eye-spots on the hindwing is absent or only feebly developed in area 2. In the ♀ the wings above are smoky-black without blue lines, but with the spots showing through from beneath, and the blue submarginal line of both wings is replaced by a white one; under surface like in the ♂. — The larva lives in depressions or hollows of the trunk of a plant which is not closely defined in the report, and is



*lucretia*. visited by the ant *Cremastogaster buchneri*. Sierra Leone to Angola. — ab. **lucretia** *Sm. & Ky.* only differs by the eye-spots of the hindwing being proximally broadly bordered with red; the blue lines of the upper surface are also somewhat differently developed, the submarginal line of the forewing having disappeared posteriorly. Cameroon.

*lychnides*. **L. lychnides** *Hew.* (72 c, d). ♂. Wings above blackish-brown; forewing not marked; hindwing with a fine white marginal line and a large eye-spot proximally bordered with reddish-yellow in area 2; under surface blackish-grey with rather thick, normally arranged border-lines; hindwing without an eye-spot in area 3. In the ♀ the wings above are dark brown with an oblong yellow spot in area 1 b of the forewing and like in the ♂ with a large eye-spot in area 2 of the hindwing; the areas 3 to 5 of the hindwing with rather distinct black marginal spots; under surface like in the ♂. Old Calabar.

*rufomarginata*. **L. rufomarginata** *B.-Bak.* (72 d). ♂. Wings above blackish-brown; hindwing with yellow-bordered eye-spots at the margin in the areas 1 b to 3. Wings beneath rather light grey with fine border-lines and light spots; only the discal spots 2 to 5 of the forewing and 1 b, 1 c, 4, 5 and 7 of the hindwing are filled up with blackish; the white submarginal line of the hindwing is very thick, the other border-lines fine and separate; hindwing beneath without an eye-spot in area 3. ♀ similar to the ♂, but with a very indistinct yellowish-red spot in the „median area“ of the forewing. Expanse: 29 to 31 mm. Congo District: Makala and on Lake Albert-Edward.

*lamprocles*. **L. lamprocles** *Hew.* (72 b). ♂. Wings above uni-coloured blackish; the black spots beneath more or less diaphanous; hindwing with a fine white marginal line at least in 1 c and 2. Wings beneath by the expansion and union of the border-lines white with very much reduced black or blackish-grey markings; the latter consist of the basal spots, on the forewing, a grey transverse streak of the ground-colour before the apex of the cell, the central spot, the large discal spot in 1 b, a transverse band between the veins 1 and 4, which is formed by the discal spot 2 and in 1 b and 3 by a streak of the ground-colour, a slanting transverse band formed by the discal spots 3 to 6 and 8, a slanting subapical band of the ground-colour in 5, 6 and 8, and finally of the submarginal band and the marginal line, the latter growing very fine or disappearing altogether towards the posterior angle. On the hindwing the ground-colour appears as a black streak close at the base; then follow the narrow basal band between the proximal margin and vein 8, the central spot, the discal spots forming four entirely separated pairs (1 b + 1 c, 2 + c, 4 + 5, 6 + 7); the discal spot in 6, however, is very small and punctiform; between the discal spots there are sometimes also fine transverse streaks or transverse lines of the ground-colour; the two white marginal lines are completely united into a white marginal band, being only interrupted by the eye-spot in area 2, and proximally bordered by the coherent submarginal band. The ♀ is unknown to me. Cameroon.

*lyzanius*. **L. lyzanius** *Hew.* (= *regilla* *Holl.*; *turbata* *Sm. & Ky.*) (72 d, c). It is smaller than *lamprocles*, but only differs otherwise by the marks mentioned in the review of the species. The ♀ is above lighter, in the basal part of the areas 4 and 5 between the central spot and the discal spots almost white and also lighter whitish in the areas 2 and 3 outside of the discal spots, hindwing with two white lines at the margin; the under surface is almost white owing to the expansion of the border-lines and very similar to the under surface of *lamprocles* ♂. — The larva, according to LAMBORN'S observations, is visited by the ant *Pheidole rotundata*. Sierra Leone to Angola. — Vein 8 of the forewing is usually present though very short; there is before me an entirely typical specimen from Cameroon, in which it is entirely absent. The species thus sometimes appears as *Triclema*, sometimes as *Neurypexina*.

*flavomaculata*. **L. flavomaculata** *Sm. & Ky.* (72 d). This species which, according to BETHUNE-BAKER, is a genuine *Lycaenesthes* and thus has a separate vein 11 of the forewing, approximates *L. lyzanius* so much that I can only distinguish it by the small yellowish spots on the forewing above and by the two border-lines in the discal cell of the forewing being united into a white spot; in the ♂ of *lyzanius* these lines are broadly separated. LAMBORN also bred this species (♂ and ♀) from larvae that were visited by ants; but he does not describe the ♀ and does not say anything about the differences between this species and *lyzanius*. Nigeria to Angola.

*lacides*. **L. lacides** *Hew.* (72 d). Both wings above uni-coloured black, without markings; ground-colour of the under surface as well as the spots almost black; border-lines moderately thick, separate, and normally arranged; an eye-spot bordered with red in area 2 of the hindwing. Cameroon to Angola.

*inconspicua*. **L. inconspicua** *Ham. Drc.* (72 e) only differs from *lacides* by the distal border-line of the basal spot and the proximal one of the central spot being combined into a white spot in the discal cell, and by the white submarginal line of both wings being much thicker. Cameroon near Bitje. — Probably only an aberration of *lacides*.

*xanthopocila*. **L. xanthopocila** *Holl.* (= *lycotas* *Sm.*, *lukokeseha* *Karsch*) (72 e). ♂. Wings above black; forewing with a rounded, orange-yellow discal spot covering the centre of area 1 b and the base of area 2; area 1 b between the base and this spot covered with reflecting blue scales; hindwing between the veins 1 b and 6 with an anteriorly narrowed, violettish-blue postdiscal band which is more or less broad, and at the margin with a whitish, in the areas 2 and 3 reddish-yellow submarginal line being formed of bows and a fine white



marginal line. The very distinctly prominent marking beneath is best seen from the figure. The ♂ differs above by the spot of the forewing and the postdiscal band of the hindwing being light yellow. French and Belgian Congo.

**L. kampala** B.-Bak. (72 e) approximates *xanthopoeila* very closely, but it has a smaller yellow spot *kampala*. only situate in area 1 b on the forewing above and no blue markings. The under surface deviates by the marks stated in the review. ♀ above blackish-brown without yellow spots. Uganda.

**L. maeander** Plötz (= *chryseostictus* B.-Bak.) (72 e). ♂. Wings above blackish; forewing behind the centre of area 1 b with a reddish-yellow or brownish-yellow, rounded, small spot which rarely also penetrates somewhat into area 2; hindwing uni-coloured with a fine bluish-white marginal line between the veins 1 b and 3 and more or less distinct black marginal spots of which that in area 2 has sometimes a reddish-yellow ring, ab. **chryseosticta** B.-Bak. The ♀ is smaller on an average and has more distinct markings on the hindwing above. The under surface is similar to that of *lusones*, but at once discernible by the absence of the yellow spot of the posterior margin of the forewing. Sierra Leone to Congo. *maeander*. *chryseosticta*.

**L. lusones** Hew. (= *fulvimacula* Mab.) (72 f). This species is widely distributed and easily noticeable *lusones*. by the yellow spot of the posterior margin on the otherwise dark under surface of the forewing. The upper surface is very similar to that of *maeander*, but it has a larger yellow spot on the forewing, generally reaching to vein 3. The neuration of the forewing is variable, so that vein 8 is sometimes absent, sometimes present, and vein 11 may be separate or united with vein 12. Sierra Leone to Angola.

**L. radiata** B.-Bak. (72 f). This species unknown to me almost makes the impression of an aberration, *radiata*. but according to BETHUNE-BAKER it is a distinct species closely allied with *rufomarginata*. It is easily identified by the marks stated in the review of the species and by the figure reproduced according to BAKERS work. Sierra Leone.

**L. bitje** Ham. Drc. (72 f) is unknown to me, but it can be easily ascertained according to the marks *bitje*. in the review of the species and to the figure. South Cameroon.

**L. locuples** Sm. (72 f). This species initiates those forms of *Lycaenesthes* in which the upper surface of both wings is at least in the centre extensively orange-yellow. — Forewing above bright orange, at the base, at the costal margin as far as the discal cell, at the apex at least as far as the centre of area 4 and 5, and at the margin about 2 mm broad black; the marginal band at the posterior margin pointedly extended towards the base; a black transverse streak at the end of the discal cell. Hindwing above in the centre with a large or small orange area covering the apex of the discal cell and a great part of the areas 1 c to 5. The under surface with a light orange ground-colour distinctly contrasting with the jet-black markings; the border-lines of the spots are also yellow and therefore not distinguishable from the ground-colour; the black markings are almost quite the same as in *xanthopoeila*. Nigeria and South Cameroon. *locuples*.

**L. erythropoeila** Holl. (72 h) I was unable to examine. The most important marks are stated in the review and the marking beneath is to be seen from the figure. French Congo: Ogowe River. *erythropoeila*.

**L. leptines** Hew. (72 f) scarcely differs above from the preceding species, but beneath distinguished *leptines*. by the whitish border-lines being separated somewhat from the dirty yellow ground-colour and by but few spots being black and the others dull grey. In the ♀ the orange spot of the forewing above is much smaller, only covering the base of the areas 2 and 3 and a small part of area 1 b, and the hindwing above is black as far as the apex of the discal cell. French and Belgian Congo; South Cameroon.

**L. makala** B.-Bak. (72 f, g) is very similar to *leptines*. BAKER points out that the yellow areas above are larger and the marking beneath different in many particulars. These differences are to be seen from the figures, but they seem to me to be rather insignificant with the sole exception that the border-lines are almost white. Congo District near Beni and Makala. *makala*.

**L. mahota** Sm. (72 g) is distinguished by the orange area of the forewing having almost the same shape as the wing itself, whereby the black margins are almost equally broad. The border-lines of the under surface are thick and white. Described from the Delagora Bay, but it is said to occur also in Cameroon. *mahota*.

**L. lychnaptes** Holl. (72 g) deviates from the following species by the equally broad dark costal-marginal band on the forewing above. The markings beneath are jet-black with white border-lines. French Congo: Ogowe River. *lychnaptes*.

**L. pyroptera** Auriv. (72 g). Both wings above are of a bright light orange, at the base narrowly black; at the apex broader black, the marginal band posteriorly rapidly tapering off and at the posterior angle very narrow and ending pointedly. Hindwing at the costal margin to vein 6 at most blackish, then with a very *pyroptera*.



fine dark marginal line and a small black submarginal dot in area 2; the areas 1 a and 1 b are blackish. On the under surface nearly all the spots as well as the ground-colour are yellowish with broad white border-lines; black or blackish are only on the forewing the basal spot in 1 b and the discal spots of the areas 1 b, 2 (3), 4, 5 (and 6), and on the hindwing the basal transverse band, the discal spots 1 c, 2, 4, 5 and 7 and the marginal spots in 1 c and 2. This small, slender species is known from Cameroon and the district of the Congo River.

*leptala.* **L. leptala** *Courv.* seems above to be quite the same as *pyroptera*, but beneath it differs by the dark colour of all the spots. COURVOISIER only compares it with *leptines* and *makala* from which it is very different, and describes it as follows: „Contours of the wings exactly as in *leptines* and *makala*; also the colouring above like in those two orange with a slight lustre; but it deviates by decidedly black and much narrower margins of the wings, beginning 1 mm broad at the costa of the forewing, continuing finer along the costa, expanding to 2 mm at the apex and tapering off again towards the posterior angle; on the hindwing the costa and proximal margin is about 1 mm broad bordered with black, the rest of the wing only linearly margined with black; in the anal angle and in the cell CU (area 2) of the hindwing one small black marginal dot each. — Under surface: ground-colour light orange; the marking is difficult to describe, extraordinarily similar to that in the two above-mentioned species, but the black pair of dots as well as the white transverse lines are more prominent; in the anal angle and in the cell CU (area 2) between the origins of the two distal small tails one bright metallic scaled, black spot each, edged with reddish.“ „German West Africa“; (Cameroon?).

*bakeri.* **L. bakeri** *Ham. Drc.* (72 g). Of this beautiful species only one ♀ is known, and its affinity is therefore uncertain. „Allied with *L. makala* B.-Bak.: upper surface bright orange; forewing with a broader dark brown costal margin and distal margin; a brown transverse streak at the cell-end is united with the costal margin. The under surface with brown spots and white bands almost like in *makala*, but they are less numerous; the whole discal area of the forewing and the distal half of the hindwing with a bright orange ground-colour; four black marginal spots in the anal region are strewn with blue scales; thorax and abdomen above brown, beneath light-coloured; legs black and white; palpi white with a black apex and black hair.“ Belgian Congo: Kassai River.

*scintillula.* **L. scintillula** *Holl.* (72 g). Wings above lustrous orange-red with dark transverse bands showing through from beneath, at the base very broadly darkened; costal margin of the forewing at the base as far as the cell black, distally rapidly tapering off and behind the cell-apex very narrow, then again expanded at the apex where it is sometimes almost 2 mm broad; marginal band much narrower almost equally broad; hindwing at the costal margin as far as vein 6 and at the proximal margin in 1 a and 1 b broad black, at the margin only with a fine black marginal line and with black spots in the areas 1 c to 5; these spots are united with the marginal line, the spot in area 2 is large and quadrangular, and that in 1 c consists of two spots, the proximal spot being triangular and the distal spot transverse, the spots in 1 c and 2 are separated from the black marginal line by a fine whitish line. The ground-colour beneath is more or less yellowish with thick whitish border-lines and for the greatest part with blackish markings. The ♀ differs from the ♂ by a broad black costal margin and distal margin and by the narrow black posterior margin of the forewing above; hindwing above with a broader black marginal line which is interrupted at the veins by the reddish-yellow colour. Sierra Leone to Congo.

*aurea.* **L. aurea** *B.-Bak.* (72 h) is unknown to me, but as the figure shows it approximates *L. scintillula* very much, and is said chiefly to differ by a more golden yellow ground-colour above and a more yellowish under surface. ♀ unknown. Gold Coast.

*zenkeri.* **L. zenkeri** *Karsch* (72 h) by the marking beneath completely differs from all the preceding species. Wings above black; the forewing with a large orange spot of the posterior margin reaching to vein 5 or 6 and also covering a part of the cell-apex; hindwing with a yellow median area (in 1 c to 5) and indistinct black marginal spots. The under-surface has already been described in the review of the species. Cameroon to Congo.

*juba.* **L. juba** *F.* (72 h) is above similar to *zenkeri*, but it has larger orange areas on both wings and red-curved marginal spots on the hindwing above. The under surface is also very similar to that of *L. zenkeri*, but it deviates by the discal band of the hindwing uniting with the submarginal band in area 2. Sierra Leone to Nigeria.

*pythagoras.* **L. pythagoras** *F.* is only known by the quite insufficient description of FABRICIUS and the probably not life-like figure in DONOVANS „Insects of India“ (t. 39, fig. 3). The upper surface and under surface of the forewing can quite easily be identified as *L. juba*; the under surface of the hindwing, however, is so different that it is impossible to identify it with that of *juba*. DONOVAN who has probably seen both forms, combines, however, in the text *juba* and *pythagoras* as the same species.

Owing to the present difficult conditions the figures of the species of this genus have only been indifferently turned out and they must always be compared with the description.



## 26. Genus: **Cupido** Schrank.

Many authors will surely be filled with indignation at my not having distributed the species dealt with here into numerous genera, as it is so very customary now. But as I will, for the sake of principle, just like Sir G. F. HAMPSON, only acknowledge such groups of species as genera, that are based upon marks of both sexes and not only on secondary sexual characters of one sex, it has been impossible for me to separate the genus into several genera.

It is made optional, however, to any one to regard the following groups which have been established according to marks of both sexes, but which are partly based only upon differences in the marking, as genera or subgenera.

The differences according to the male genital organ, moreover, can only be made intelligible by figures and as the latter are not introduced in this part of the work, it would be erroneous to supply descriptions that could not be used. I hope therefore that the readers will thank me for having tried to characterize the groups in such a way that the ♀♀ can be ascertained and the ♂♂ also without examining the genital organ, the great scientific and biological importance of which I of course do not in the least underrate otherwise.

Those being interested in the value and applicableness of different morphological marks for the separation of the species of *Cupido* into groups, I refer to the review on this genus in my work *Rhopalocera aethiopica*\*).

How much will have yet to be done in the systematization of the species of *Cupido* follows also from the classification in *Lepidoptera indica* of the „genera“ *Lycaenopsis*, *Megisba*, *Neopithecops*, *Spalgis* (!), *Taraka*, *Castalius*, *Tarucus*, and *Zizera* in a separate, though cautiously not characterized „Subfamily“ *Lycaenopsinae*.

### Review of the groups or subordinate genera.

#### I. Forewing always with 11 veins, only vein 8 being absent.

A. Forewing beneath at the base with a dark longitudinal streak following the posterior side of vein 12, or in area 12 with dark spots or light transverse lines; very rarely it is without the longitudinal streak as well as the markings in area 12, but in this case both wings are below at the base of the costal margin distinctly hued yellowish.

α. Forewing beneath without a longitudinal streak in area 11, but generally with dark transverse markings in the discal cell and in the areas 11 and 12. If these transverse markings are absent, both wings are below at the base covered with yellowish. Eyes almost invariably hairy.

\*. Hindwing beneath without any transverse spot or streak at the end of the discal cell, at the end of vein 2 tailed. — *Phlyaria* Karsch. First Group.

\*\*.

o. Wings beneath with distinctly prominent, angular or ring-shaped dark markings.

1. The discal band of the forewing beneath is interrupted at vein 3 by the discal spot 2 being situate much more towards the base than the discal spot 3. Hindwing at vein 2 tailed. — *Uranothauma* Butl. Second Group.

2. The discal band of the forewing beneath coherent. Vein 11 of forewing generally separate.

a. Hindwing at vein 2 but slightly angular. — *Harpenderus* Heron.

Third Group.

b. Hindwing at vein 2 tailed. — *Cacyreus* Butl.

Fourth Group.

oo. Wings beneath with a dark ground-colour which is hardly lighter than the markings. It is therefore indistinct and chiefly only visible owing to its fine white border-lines. — *Nacaduba* Moore. Ninth Group.

β. Forewing beneath at the base with a distinct, sharply defined black longitudinal streak or longitudinal ray filling up at least the area 11 being defined by the discal cell and the veins 11 and 12.

\*. Eyes bare. — *Tarucus* Moore + *Castalius* Hübn.

Fifth Group.

\*\*.

\*) Swensk. Wetensk. Akad. Handl. 31 (1899) p. 353 seq.

- o. Hindwing tailless. Vein 11 of forewing for some distance united with vein 12.
  - 1. Hindwing above with a purely white, coherent, broad median band. Sixth Group.
  - 2. Hindwing above without a white transverse band. — *Azanus Moore*. Seventh Group.
- oo. Hindwing at vein 2 tailed. Vein 11 of forewing quite separate. — *Syntarucus Butl.* Eighth Group.
- B. Forewing beneath at the base always without a dark longitudinal ray and without markings at the costal margin in area 12 \*), generally unmarked as far as the apex of the discal cell.
  - α. Both wings beneath at the end of the discal cell with a transverse streak or transverse spot.
    - \*. Both wings beneath without any black punctiform spots at the base.
      - o. Hindwing beneath with two jet-black marginal spots at most in 1 c and 2. Eyes hairy. The discal cell of the forewing beneath opposite vein 2 with a large spot often only marked by its white border-lines.
        - 1. Vein 11 of forewing for a long distance united with vein 12. — *Nacaduba Moore*. — Hindwing in the African species tailless. Ninth Group.
        - 2. Vein 11 of forewing separate.
          - a. Hindwing at the end of vein 2 tailed. The marginal spot in area 2 of the hindwing beneath towards the base bordered with yellow. — *Lampides Hübn.* Tenth Group.
          - b. Hindwing tailless; its marginal spots not proximally bordered with yellow and sometimes absent. — *Cyclirius Butl.* Eleventh Group.
      - oo. Hindwing beneath at least with four large, jet-black marginal spots dusted with a metallic colour (in the areas 2 to 5). Eyes bare. — *Brephidium (Scudd.) B.-Baker*. Twelfth Group.
    - \*\*). At least the hindwing beneath at the base or at the costal margin with 1 to 4 sharply prominent black dots generally surrounded with white.
      - ×. Hindwing beneath in the areas 3 to 6 without marginal spots or only with indistinct light (yellowish) spots. Ground-colour of the under surface more or less covered with yellowish. Discal spots of both wings black and separate or almost separate. Wings on both surfaces with sharply defined black marginal line and fringes. — *Neochrysops B.-Baker* (ex parte) Fourteenth Group.
      - × ×. Hindwing beneath in the areas 3 to 6 with distinct dark (grey, brown or black) marginal spots surrounded with light (whitish). These spots are rarely indistinct, but always dark. Ground-colour of under surface never yellowish.
        - o. Vein 11 of forewing quite separate and straight.
          - †. The discal spots 1 c to 6 of the hindwing beneath are lighter than the subbasal dots or at least lighter than the subbasal dot 7; rarely almost black, scarcely lighter than the subbasal dots, but in this case at least in the areas 4 and 5 large, angular and contiguous. They are generally slightly darker than the ground-colour and only owing to their thick whitish bordering distinctly prominent.
            - 1. The discal spots are never white-pupilled. All the subbasal spots of the hindwing with a black pupil. The marginal spot 2 of the hindwing beneath proximally bordered with orange-yellow or sometimes without a special border. — *Euchrysops Butl.* and *Neochrysops B.-Baker* (ex parte). Fifteenth Group.
            - 2. Hindwing with 4 subbasal spots (in 1 a, 1 c, 7, and the cell), but only the subbasal spot in 7 with a black pupil. The marginal spot 2 of the hindwing beneath proximally bordered with hemochrome. Eyes hairy. Hindwing tailed. Seventeenth Group.
          - ††. The discal spots 1 c to 6 of the hindwing beneath not or scarcely lighter than the subbasal dots with or without a light ring, often separate and punctiform, never large and transverse. Sixteenth Group.
    - oo. Vein 11 of forewing always bent towards vein 12, often touching it or united with it.
      - †. The discal spots 1 c to 6 of the hindwing beneath neither black nor punctiform. Eyes bare.

\*) In the species of the ninth group (*Nacaduba*), however, there sometimes occur fine, white (indistinct) transverse streaks in area 12.



## §. Hindwing tailless.

1. Hindwing beneath without a basal dot in area 1 c and only in area 2 with a large black marginal spot. Eighteenth Group.

2. Hindwing beneath with a basal dot in area 1 c and with three, almost equally sized, black marginal spots proximally bordered with orange-red (in 1 c, 2 and 3). — *Chilades Moore*. Nineteenth Group.

§§. Hindwing at vein 2 tailed. Marginal spot 2 of hindwing towards the base not or only little bordered with yellow. Hindwing beneath without a basal dot in area 1 c.

1. Under surface with a light or dark grey ground-colour and white-margined spots. Twenty-first Group.

2. Under surface with a white ground-colour and therefore without a separate white border of the spots. Twenty-second Group.

††. The discal spots 1 c to 6 of the hindwing beneath black, punctiform and separate. — *Zizera Moore* + *Zizeeria Chapm.* + *Zizina Chapm.* + *Zizula Chapm.* + *Actizera Chapm.* Twenty-fourth Group.

β. Both wings beneath without a transverse streak or transverse spot at the end of the discal cell and with a white ground-colour. — *Oboronia Karsch* + *Athysanota Karsch* + *Termoniphas Karsch*. Twenty-third Group.

## II. Forewing only with 10 veins, both veins 8 and 9 being absent.

α. Hindwing beneath with large black marginal dots in the areas 2 to 5, but without any proximal yellow bordering of them. A very small species. — *Oraidium B.-Baker*. Thirteenth Group.

β. Hindwing beneath only in area 2 with a large, black marginal spot proximally accompanied by a very large orange-yellow spot. Larger species, 25 to 32 mm. — *Neolycaena Karsch*. (nec de Nic.) + *Cupidopsis Karsch*.

## First Group.

This group corresponds with KARSCH's genus *Phlyaria* and is at once recognizable by the reduced marking of the under surface, but it cannot be distinguished from the other groups by morphological marks. KARSCH states that vein 11 of the forewing forms an anastomosis with vein 12. This mark, however, is not reliable. In two specimens of the typical species, *C. cyara Hew.*, lying before me vein 11 is quite separate in one, whilst in the other it is for a short distance fused with vein 12.

By the marking beneath the species belonging hereto remind us very much of certain species of *Pentila* but according to POULTON they copy certain Pierids. The hindwing is tailed at vein 2. The forewing exhibits beneath on the white or yellowish ground unequally large black marginal spots and a larger costal-marginal spot, as well as (at least in the ♂) a black basal spot in area 1 b. Hindwing beneath at least with two black marginal spots scaled blue or green in 1 b and 2 and a black spot at the end of vein 5.

Above the forewing of the ♂ is dark violettish blue with a black marginal band, and the hindwing shows a white or whitish transverse band which is sometimes very broad and covers the whole surface except the base and a dark marginal band. Fringes of both wings between the veins spotted white. The eyes are moderately long and densely haired.

The male scales (androconia) are rather broad and obtuse. They do not form any maculae nor velvety streaks, but are distributed across the upper surface of the forewing among the usual scales.

## Review of the Species.

A. Wings beneath at the base of the costal margin distinctly hued yellowish. Hindwing beneath at the base not or hardly scaled black, before the centre with a black dot on vein 1 b. Both wings beneath without a transverse spot at the end of the discal cell. Forewing beneath at the costal margin only with one black spot situate about midway between the discal cell and the apex of the wing.

α. Hindwing beneath in area 7 with two black dots, above violettish-grey with a darker marginal band and an indistinctly defined, whitish discal band broadly beginning at the proximal margin and gradually tapering off and ending at vein 4 or 5. *C. stactalla*.

β. Hindwing beneath without markings in area 7, above with a very broad, sharply defined, white discal band reaching to vein 6. *C. cyara*.

B. Both wings beneath with a purely white ground-colour. Hindwing beneath at the base in all the areas scaled black, but without a black dot on vein 1 b. If the forewing shows beneath only one costal-marginal spot, it is situate at the centre of the costal margin, opposite the apex of the discal cell.

α. Forewing beneath without a transverse spot at the end of the discal cell and with but one costal-marginal spot (in the areas 10 to 12). — ♂ forewing above with a white anal-marginal stripe reaching at least to the fold of area 1 b. Hindwing above with a narrow marginal band of only about 2 mm width.

*C. chibonotana*.

β. Forewing beneath with 4 large black transverse spots at the costal margin, the central one of which also covers the apex of the discal cell. Marginal band of the hindwing above 4 to 5 mm broad. — ♂ anal margin of the forewing above not or very slightly scaled white.

*C. heritsia*.

*stactalla*. **C. stactalla** Karsch (72 h). The ♂ has been sufficiently described above, and is at once discernible from the following species by the black dots in area 7 of the hindwing beneath; the whitish transverse band of the hindwing above is probably very variable in its width. ♀ unknown to me. Sierra Leone to Nigeria.

*cyara*. **C. cyara** Hew. (72 h) occurs from Cameroon to Angola and British East Africa; it is easily recognized by the marks mentioned above. — **tenuimarginatus** Grüb. differs from the type by the faintly visible marginal band of the hindwing above and the great reduction of the black spots beneath; in the forewing the costal-marginal spot at the mouth of vein 9 as well as the marginal spots from the apex to vein 2 are very small, in the hindwing there is only a black dot at the base of area 1 a and two small marginal spots in 1 b and 2. Uganda.

*chibonotanus*. **C. chibonotanus** Auriv. forms a fine transition between *cyara* and *heritsia*, but it appears to me now to be much more closely allied to the latter species than to the former. Forewing above dark violettish-brown with a blackish marginal band and at the anal margin with a white stripe of about 2 mm width reaching, however, neither to the base nor to the margin; hindwing above purely white with a black marginal band of 2 mm width, and at the base narrowly scaled black. Both wings beneath of a pure white; forewing with a small costal-marginal spot near the base and a larger one opposite the apex of the discal cell, and at the margin with irregular black spots. The hindwing has a small, irregular, black basal area, two small, indistinct costal-marginal spots, two rounded, blue-scaled marginal spots in 1 c and 2 and two rather indistinct marginal spots in 4 and 5. Kilimandjaro, at altitudes between 1300 and 1900 m.

*heritsia*. **C. heritsia** Hew. (72 i). This species being known long ago differs above from *chibonotanus* particularly by the broader marginal band of the hindwing; beneath it is distinguished by the 4 large transverse spots or transverse bands at the costal margin of the forewing and by the two distinct costal-marginal spots of the hindwing. The ♀ agrees beneath with the ♂, but above it shows a very large white anal-marginal spot of the forewing, reaching to vein 6 and also forming a spot in the discal cell; it was formerly described as a separate species (*virgo* Butl.).

### Second Group.

Both the morphological marks and the marking beneath distinctly show that the forms of this group are closely connected with those of the preceding group. The eyes are long and densely haired. Vein 11 of the forewing is at least generally fused with 12 for a short distance, or they are very closely joined. The fringes of the wings are like in the species of the preceding group spotted white between the ends of the veins. Hindwing above with distinct black, sometimes blue-scaled marginal spots in 1 c and 2.

The androconia are more elongate, often hair-like, and generally form a large spot or longitudinal streaks on the forewing above. Only in *C. antinorii* they are like in the species of the preceding group distributed across the whole upper surface without forming spots.

The marking beneath is completely developed, consisting of dark, angular or ring-shaped spots or transverse streaks. The forewing has 1stly separate or united black basal spots in the areas 1 b, 12, and in the discal cell; 2ndly one or two dark transverse streaks or transverse bands beginning at the costal margin itself and reaching right across the discal cell at least to the median; 3rdly a transverse spot at the end of the discal cell; in the 4th place a row interrupted at vein 3 of 8 to 9 discal spots in the areas 1 b to 6, 8, 9, 10, and in the 5th place two submarginal lines composed of dark streaks or spots. The hindwing beneath has more or less confluent black basal spots, one or two spots in the discal cell, subbasal spots in the areas 1 a, 1 b and 1 c, a transverse spot at the end of the discal cell, a frequently very irregular row of 8 discal spots, a spot before the centre of area 7, two narrow black longitudinal streaks at the costal margin in area 8, being coherent with the spots of area 7, and finally two submarginal lines composed of streaks, bows or spots, the distal line forming in the areas 1 c and 2 one large, rounded black spot each, scaled blue or green.



The margin of the hindwing projects somewhat angularly at the anal angle and shows a distinct small tail at the end of vein 2.

The ♀ is distinguished by the ground-colour above being lighter with distinct black discal spots of the forewing.

#### Review of the Species.

A. The proximal submarginal line of the hindwing beneath is not connected with the margin along vein 2. The discal spots of both wings are filled up with white, ring-shaped. — ♂. Forewing above dark violettish-blue without velvety spots or velvety streaks. *C. antinorii*.

B. The proximal submarginal line of the hindwing beneath is continued along vein 2 to the margin. At least the discal spots of the forewing are not filled up with white. — ♂. Forewing above with a large, black velvety spot at the end of the discal cell or with separate dark longitudinal streaks in the areas 1 b to 6.

α. The discal cell of the forewing beneath between the basal spot and the apex with two distinct black or brown transverse bands. The discal spots of the hindwing beneath more or less rounded off and separated in the centre filled up with white, ring-shaped.

\*. Larger, 35 to 40 mm. Both wings above with a beautiful violettish-blue reflection (♂), or at least the forewing for the greater part scaled blue. — ♂. Forewing above with a large, black velvety spot behind the apex of the discal cell. *C. crawshayi*.

\*\*. Smaller species with an expanse of 25 to 30 mm. Both wings above with a coppery brown ground-colour and without or almost without a violet reflection.

1. ♂. Forewing above with a large velvety spot in the centre.

a. ♂. The velvety spot is almost cordiform, covering the discal cell, the basal halves of the areas 4 and 5 and a great part of the areas 3 and 6 as well as a small part of area 2, but it does not reach to vein 2. *C. cordatus*.

b. ♂. The velvety spot is more elongate and extended posteriorly, so that it reaches to vein 1. *C. lunifer*.

2. ♂. Forewing above with 7 separate, more or less elongate velvety spots, two in 1 b, and one each in 2 to 6. *C. poggei*.

β. The discal cell of the forewing beneath between the large basal spot and the apex only with a dark transverse band. The discal spots of the hindwing beneath are quadrangular, more or less united into a transverse band and not or only rarely partly filled up with white.

\*. ♂. Forewing above with a large, cordiform, black velvety spot between the discal cell and the apex, almost entirely like in *C. cordatus*. *C. nubifer*.

\*\*. ♂. Forewing above in the areas 1 b to 6 and in the discal cell with fine black streaks on the folds. The discal spot 2 of the forewing beneath is situated much more towards the base than the spot in area 3.

a. Forewing shorter and broader, entirely as in *nubifer*; the small tail of the hindwing is about 3 mm long. Upper surface very dark brown. *C. delatorum*.

b. Forewing somewhat longer and narrower; the small tail of the hindwing is only 2 mm long. Upper surface light coppery brown. *C. falckensteini*.

**C. antinorii** Oberth. has above dark violet forewings bordered with blackish, and bluish-grey hindwings being darker at the margin and base; it was at first described from Abyssinia, but it occurs in East Africa as far as Rhodesia and the Manicaland and was also met with by A. SCHULTZE near Bamenda in Cameroon; ♀ unknown.

**C. crawshayi** Butl. (72 k) is the largest species of this subordinate genus and easily recognizable by the marks stated above; the ♀ is above in the basal part of the forewing scaled greenish blue, with a transverse streak in the discal cell, a large spot at the end of the discal cell, a coherent transverse band of 6 discal spots, and the marginal band black or blackish. Nyassa Land.

**C. cordatus** Em. Sh. (72 i) has in the ♂ above dark coppery brown wings without any other marks but the velvety spot of the forewing and the two marginal spots of the hindwing being decorated with some blue scales. On the forewing beneath the discal spots of the areas 1 b and 2 are absent; ♀ unknown. British East Africa near Kavirondo and Kikuyu.

**C. lunifer** Rebel agrees beneath with *cordatus* and differs above only by the velvety spot of the forewing being extended posteriorly and reaching to vein 1; it thereby forms a transition to the following species. Described according to a single ♂ from Bukoba in East Africa.

- poggei*. **C. poggei** Dew. (72 k), owing to the separate velvety stripes on the forewing above, is generally placed next to *C. falkensteini*, but by the marking beneath it approaches more the preceding species. It occurs in Angola, Rhodesia, Manica Land, Nyassa Land, and British East Africa. — As *poggei*? (72 i) a species is figured, being entirely unknown to me or wrongly marked.
- nubifer*. **C. nubifer** Trim. (= *pclotus* Karsch) (72 i) is above very similar to *C. cordatus* except the two marginal spots of the hindwing being small and showing no metallic scales, but beneath it differs by the marks stated in the review, and on the hindwing beneath it has large, blackish-grey, oblong-quadrangular discal spots bordered with black and connected with each other into a transverse band; the space between the submarginal lines of the hindwing is entirely or for the greatest part filled up with a dark leaden grey colour. The ♀ above is without the velvety spot, but with black discal spots and a black spot at the cell-end. Natal to British East Africa; also found by Dr. A. SCHULTZE in Cameroon near Bamenda. — ab. **distinctesignatus** Strand (72 k as *distinctissima*) differs by the white markings beneath on both wings being more distinctly prominent. Abyssinia; similar specimens, however, are also before me from Kilima Ndjaro and Ruwenzori.
- delatorum*. **C. delatorum** Heron entirely agrees in the marking with the following species, but it deviates by a different shape of the wings corresponding with that of *nubifer* (72 i). This difference may be expressed in such a way that if two equally large and similarly spanned specimens are compared with each other, the distance between the apex of the forewing and the anal angle of the hindwing is larger in *delatorum* than in *falkensteini*. There are, however, specimens before me from Ruwenzori forming the intermediary of the two forms, and I therefore take it to be probable that *delatorum* is only a race of *falkensteini*. Ruwenzori, Elgon, and from the mountains bordering on the north-west of Lake Tanganyika.
- falkensteini*. **C. falkensteini** Dew. (73 a) differs from all the other species of the genus, except *delatorum*, by the fine black velvety lines on the ♂ forewing above. The ♀ which is not before me has a whitish ground-colour above with a broad black marginal band of both wings, a dark costal margin of the forewing and black discal spots. The typical form occurs from Sierra Leone to Angola and British East Africa. — **artemenes** Mab. (72 k) is the form occurring in Madagascar, apparently only distinguished by the purely white ground-colour of the forewing beneath.
- artemenes*.

### Third Group.

This group was established in 1909 by F. A. HERON as a separate genus, *Harpendyreus*, for a new species from Ruwenzori. It is in fact an intermediary between the second and fourth groups and shows how closely these two are connected.

The forewing has only 11 veins, and vein 11 is quite separate without being fused with vein 12. Hindwing at the end of vein 2 feebly angular without any small tail. It is not mentioned whether the eyes are bare or hairy. They are probably hairy, in which case *Harpendyreus* can only be distinguished from the species of the second and fourth groups by the absence of the small tail on the hindwing. But as the small tail of the hindwing is of such little systematical importance in the genus *Cupido* that it may be absent or present in races of the same species, it is evident that the genus *Harpendyreus* can be but faintly supported.

In the marking beneath the only species known closely approximates the species of the second group, particularly *C. antinorii* Oberth., but it differs by the discal spot 2 of the forewing being situate almost right behind the discal spot 3 and not much more towards the base.

- reginaldi*. **C. reginaldi** Heron is not before me, but according to HERON's description and figure it has the size and shape of the wings of *C. falkensteini* (73 a). ♂. Wings above dull violettish-blue with a broad, blackish marginal band and feebly transparent markings beneath; fringes white with dark spots on the ends of the veins; hindwing at the margin in area 2 with a small, rounded, black, blue-scaled spot proximally defined by yellowish, but without such a spot in 1 c. Beneath the hindwing and apical half of the forewing shows a whitish-grey ground-colour, whilst the basal half of the forewing is brown; the discal spots of the forewing are ring-shaped and form a feebly bent, coherent transverse band from the costal margin to the proximal margin; the proximal submarginal line is undulate and coherent, the distal line consists of separate dark dots, one in each area; the spots beneath are almost entirely arranged as in *C. antinorii*, but darker and more compressed. The ♀ is on both sides much darker than the ♂ and above scarcely hued with blue. Ruwenzori.

### Fourth Group.

This group having been denominated by BUTLER *Cacyreus*, though it was never characterized by him, is so closely allied to the preceding groups that it might better be united with them. I formerly believed that the two groups could be distinguished by vein 11 of the forewing being for some distance fused with vein 12 in the species of the second group, whilst in *Cacyreus* it runs separately. On examining it more closely, however,



it proved that vein 11 may also be separate in the species of *Uranothauma* and that there occur specimens of *C. lingeus* in which it is fused with vein 12 for some distance. This mark is therefore entirely useless for the separation of the two groups.

Moreover, as in both the groups the hindwing is at the end of vein 2 shortly angular and tailed, and vein 9 of the forewing is developed, only the marking beneath remains for the distinction of the groups. This marking is, as is shown by the figures, very peculiar, but in fact it consists of the same spots as in the second group. We may state as easily visible differences that the discal spot in area 2 of the forewing is removed more towards the margin and touches the discal spot in area 3, and that the discal spot in area 7 of the hindwing forms a dark transverse band completely reaching to the discal cell.

#### Review of the Species.

- A. Forewing beneath in the discal cell with 4 white and three dark alternating transverse streaks. The wings in the ♂ above light blue, in the ♀ blackish-brown, with white spots and a blue reflection in the basal part. Eyes hairy. *C. lingeus*.
- B. Forewing beneath in the discal cell only with a dark transverse band bordered with white. Wings above coppery brown with or without a violet reflection. Fringes uniformly spotted white.
- α. Eyes hairy. Wings above more or less reflecting blue. *C. palemon*.
- β. Eyes bare. Wings above bronze-brown without any blue. *C. marshalli*.

**C. lingeus** Cr. (73 a). ♂. Wings above light blue, at the margin somewhat darkened, the markings *lingeus*. beneath feebly showing through; fringes of forewing with unequally large white spots; the discal spots 2 to 6, 9 of the forewing beneath form a coherent, feebly bent, almost black transverse band. The discal spot 2 of the hindwing beneath is more remote towards the base than the discal spot 3 and is distally accompanied by a distinctly prominent white spot. The ♀ has a distinct black transverse spot on both sides bordered by a white spot, at the end of the discal cell of the forewing and besides some white submarginal spots; its hindwing is above more or less brightened by whitish, rarely the white markings above are almost entirely absent, ab. **virilis** ab. nov. The species occurs everywhere on the Continent and in all the islands of the Ethiopian region. *virilis*. MANDERS found the larva on *Coleus hybrida* and describes it to be finely haired, of a light reddish green, the dorsal line and lateral lines red and with two slanting transverse lines on each side likewise red. Pupa similarly coloured, finely haired, with a black dorsal spot on either side of the base of the wing-cases. — **ciliaris** Auriv. *ciliaris*. deviates by the fringes of the forewing being white with equally large spots, whilst those of the hindwing are uni-coloured white. East Africa: Mt. Meru.

**C. palemon** Cr. (73 a). Wings above coppery brown with a faint violet reflection, and in the ♀ some- *palemon*. times in the basal part with blue scales; fringes white with equally large black spots at the ends of the veins; the very peculiar complex marking beneath is best seen from the figure. South and East Africa to the Ruwenzori. — **fracta** Grünb. shows the dark brown, white-edged postdiscal band of the forewing beneath in the areas 3 *fracta*. to 1 b sharply defined and proximally removed in such a way that in each of these areas the distal white bordering forms the continuation of the proximal dark brown border of the preceding area. Ruwenzori.

**C. marshalli** Butl. is smaller than *palemon*, but otherwise it only deviates by the marks mentioned *marshalli*. above. Cape Colony to Natal and Transvaal. It lives on species of *Geranium*.

We may mention here that STAUDINGER states in his work „Exot. Schmett.“ I, p. 271. that in West and East Africa there occurs a form of *Cupido* (*Talica*) *nyseus* which is said to differ from the East Indian typical form only by the absence of the small tail of the hindwing, and which was therefore later on denominated by BUTLER as var. *ecaudata*. As far as I know, this species has never been found again in Africa hereafter, so that STAUDINGER's statement is probably due to an error of the patria of his specimens. The species is described and figured in Vol. IX of this work (p. 924 and t. 145 k).

#### Fifth Group.

In this group I combine the species that are generally distributed among the „genera“ *Tarucus* Moore and *Castalius* Hübn. These two „genera“ have of late (1917) been revised by BETHUNE-BAKER and FRUHSTORFER with respect to the structure of the male sexual organs, but the two authors did not agree on the differences of the genera. BETHUNE-BAKER, for instance, places the Asiatic species *ananda* de Nic. and *fasciatus* Rüb. to *Tarucus*, FRUHSTORFER to *Castalius*.

If we take no account of the formation of the male sexual organs, which cannot be taken into consideration in this work, the ♂♂ of *Tarucus* and *Castalius* only differ by the male scales being present in the former, but absent in the latter. The ♀♀, however, are not separable by morphological differences.



The following review refers to both sexes, as far as they are known to me and is chiefly based upon the dark markings beneath. They consist on the forewing of a distinctly prominent longitudinal streak in area 11, one basal spot each in 1 b and 2 as well as a spot in the discal cell (all three being often united into a slanting transverse streak), of a transverse streak at the end of the discal cell, of 6 or 7 quite irregularly arranged discal spots or discal dots, of a postdiscal or submarginal bent row of 7 or 8 separate spots which may also form a band, and of 6 or 7 smaller marginal spots. The hindwing shows separate black basal dots or a basal transverse streak formed by the junction of the dots, three subbasal dots in 1 c, 7 and the discal cell, a transverse streak at the end of the discal cell, which, however, may also be absent, 2 to 8 usually irregularly arranged discal dots, eight separate or united postdiscal or submarginal spots and eight black marginal spots being often partly scaled green.

In the species that are generally placed to *Castalius*, frequently several of these spots are absent or they are situate very near to the margin. *C. hintza*, however, forms also in this respect a fine transition to the forms of *Tarucus*.

### Review of the Species.

- I. The discal spots of the hindwing beneath are large quadrangular and form a coherent, almost straight transverse band directed from the centre of the proximal margin against the apex of the wing. The white ground-colour forms angular spots between the dark markings, whereby the under surface reminds us very much of that of the species of *Hesperia*. The fringes of the wings are white with distinctly prominent black spots at the ends of the veins. Tail of the hindwing short.
  - α. The dark marginal spots beneath are small or indistinct, sometimes, particularly in area 3 of the hindwing, entirely absent. — ♂. Wings above quite blue with a fine black marginal line. — ♀. Forewing above only with 4 or 5 angular white spots. Hindwing above with indistinctly defined grey spots. *C. thespis*.
  - β. Marginal spots beneath all distinct and sharply defined. — ♂. Wings above violettish blue with a broad blackish marginal band. — ♀. Both wings above in the centre white. *C. bowkeri*.
- II. The discal spots of the hindwing beneath are irregularly arranged and never form a coherent transverse band.
  - A. The discal spots of the hindwing beneath are completely present and all or nearly all are situate before the centre of their area. Hindwing beneath always with a dark transverse streak or transverse spot at the end of the discal cell.
    - α. The postdiscal spots of the hindwing beneath are far remote from the margin and are at least in the areas 3 to 5 situate but little behind the centre of these areas. The marginal spots 1 c to 3 (to 5 a) on the hindwing beneath are strewn with greenish scales.
      - \*. The discal and postdiscal spots of the hindwing are all entirely separate and rounded, punctiform. *C. sybaris*.
      - \*\*. The discal and postdiscal spots of the hindwing are neither all rounded, nor all separate.
        - o. The discal spots 1 b and 2 of the forewing form with the discal spots 3 to 5 a coherent, somewhat slanting, blackish transverse band. Frons black with white lateral margins. — ♂. Forewing above blackish-brown without any blue. *C. grammicus*.
        - oo. The discal spots 1 b and 2 of the forewing are situate in one line with the transverse streak at the end of the discal cell, but not with the discal spot in area 3, which is removed more towards the margin. Frons white. — ♂. Wings above bright blue or violettish-blue.
          - C. quadratus*.
          - C. theophrastus*.
          - C. mediterraneae*.
    - β. The postdiscal spots of the hindwing beneath are strigiform, very near to the margin, and all are situate far behind the centre of their areas; they can therefore all be denoted as submarginal spots. Only the marginal spots 1 c and 2 of the hindwing beneath are scaled blue; the discal spot 5 of the hindwing is situate far behind the centre of area 5, close at the submarginal spot 5. *C. hintza*.
  - B. The discal spots of the hindwing beneath are generally not all there, but they are all or nearly all situate close at the submarginal spots, or they are even united with them. Wings also in the ♂ above black with white spots or for the greatest part white.
    - α. Hindwing on both sides with a distinct black transverse streak at the end of the discal cell. Forewing above almost invariably with a distinct white spot in the black marginal band in area 4 (and 5). Hindwing without a discal spot in area 5.
      - \*. The discal spot in area 7 of the hindwing is situate far behind the apex of the discal cell. The discal spots 1 c to 4 are all or nearly all present.



- o. The discal spot 7 of the hindwing beneath is situate about midway between the apex of the discal cell and the discal spot 6 and is entirely separated from both. *C. calice.*
- oo. The discal spot 7 of the hindwing beneath is removed more towards the margin so that it touches the marginal spot 6 or is situate almost right before it.
  - 1. The white discal area on the forewing above is large, it reaches to the posterior margin, where it is about 5 mm broad. The white transverse band of the hindwing above reaches to the costal margin. *C. ertli.*
  - 2. The white discal spot on the forewing above is much smaller, not reaching to the posterior margin, being in area 1 b only 2 to 2½ mm broad and at the posterior angle of the discal cell deeply indented or almost interrupted by the black colour.
    - a. Wings beneath with a white ground-colour and black markings. *C. melas.*
    - b. Wings beneath with a light yellowish-grey or creamy ground-colour and brownish markings. *C. griquus.*
- \*\*.
- β. The discal spot 7 of the hindwing is large and is situate nearer to the base, thus forming a continuation of the transverse streak at the end of the discal cell. The discal spots 1c to 5 of the hindwing are entirely absent or only represented by a dot in 2. *C. gregorii.*
- β. Hindwing on both surfaces or at least beneath without any transverse streak at the end of the discal cell, rarely beneath with an indistinct yellowish transverse streak. Wings above with a broad, joint, white transverse band touching both the posterior margin of the forewing and the costal margin of the hindwing.
  - \*. Wings beneath with distinct black discal and submarginal spots in all or nearly all the areas. Discal spot 5 of the hindwing generally present.
    - o. Marginal band of the forewing above irregular with 1 to 4 distinctly prominent white spots. Submarginal line of the forewing beneath entirely coherent, not interrupted by the light veins. *C. cretosus.*
    - oo. Marginal band of the forewing above broader and less irregular, often without any spots. Submarginal line of the forewing beneath broken up into separate spots by the light veins. *C. carana.*
  - \*\*.
- \*\*.
- Discal and submarginal spots beneath indistinct, grey or pale yellowish; only the basal spots and the spots of area 1 b on the hindwing and of the areas 6 to 8 on the forewing as well as the marginal spots on the hindwing are usually black or blackish. *C. margaritaceus.*

**C. thespis** L. (73 a). ♂. Wings above uni-coloured blue with a fine black marginal line and white, *thespis.* at the ends of the veins distinctly black-spotted fringes; the veins particularly towards the margin finely blackish. The under surface is distinguished by all the dark markings being thick and large and forming angular, united spots; the white ground-colour therefore only appears as angular spots and only at the margin it forms an almost coherent row of large spots in the centre of which the dark marginal spots are absent or small and indistinct, the light spots are in the basal part hued somewhat bluish-grey, then in the centre of a purer white; of the larger spots 2 are situate in the discal cell, one triangular each at the base of the areas 2 and 3, two quadrangular spots in area 4, and one each in 5 and 6. — ♀. Wings above blackish-brown, in the basal half with a bluish reflection, in the marginal part with some white spots. Beneath like in the ♂, but with larger and more sharply defined purely white spots. Cape Colony (and Natal?).

**C. bowkeri** Trim. (73 b) is similar to the preceding species, but it differs by the smaller black spots *bowkeri.* beneath and by the differences mentioned in the review; it is also somewhat larger than *thespis.* Natal.

**C. sybaris** Hpff. (73 a). ♂. Wings above violetish-blue with a black transverse spot at the end of the *sybaris.* discal cell of the forewing, and with a dark marginal band of 1 to 1½ mm width, which is often broken up into spots on the hindwing; fringes at the base broad black, then grey or whitish; a fine white marginal line of the hindwing at least in 1 b to 4. Both wings beneath of a pure white, with separate, rounded, black discal, submarginal and marginal spots; only on the forewing the discal spots are sometimes contiguous in pairs (1 and 2, 3 and 4); the marginal spots 1 b to 3 (to 4) of the hindwing are decorated with green scales. The wings of the ♀ are above blackish-brown with white spots in the centre of the forewing and behind the centre of the hindwing; the base of both wings feebly hued bluish. Cape Colony and the whole of East Africa as far as Somali Land and Abyssinia. — **linearis** var. nov. ♂♂ from Damara and Transvaal deviate by the dark marginal band above being *linearis.* entirely absent. The blue colour is thus only separated from the margin by a very fine black marginal line; the marginal line is apparently thick, passing over into the black basal part of the fringes with a distinct boundary. This is probably the race occurring in Angola and the Ovambo Land.



*grammicus*. **C. grammicus** *Gr. Smith.* (= *louisae* *Em. Sh.*) (74 f) deviates from all the other species of this group by the wings being blackish also in the ♂ above, without any blue. Frons black with white lateral margins. Forewing above uni-coloured black (♂) or like the hindwing above with rounded marginal spots on both sides bordered with white. Under surface white with black markings; forewing with a long and broad basal streak as far as the centre of the costal margin, a posteriorly expanded transverse spot formed by the united subbasal spots of the areas 1 b, 2 and the discal cell, a transverse spot at the end of the discal cell, a coherent transverse band from the posterior margin towards the apex of the wing, formed by the discal spots 1 b to 5, a large and long discal spot near the base of area 6, uniting with the transverse streak at the cell-end, and with the usual submarginal and marginal spots, of which the former are more or less united, the latter quite separate. The discal spots of the hindwing beneath are in pairs united with each other into transverse streaks, so that the spots 1 c and 2 form a transverse streak, 3 and 4 another one, and 6 and 7 a third touching the apex of the discal cell; the discal spot 5 is situate more towards the margin than the others, but generally it is coherent with the discal spot 4; the submarginal spots are all separated, but far remote from the margin and often touch the discal spots 1 c to 5; marginal spots rounded, quite separate, in the areas 1 c to 5 decorated with green scales. This small species is apparently rare and was hitherto only found in German and British East Africa as well as in the Somali Land. It was at first described by GROSE-SMITH as a *Lycaenesthes*.

*quadratus*. **C. quadratus** *Grant* is smaller (expanse of wings: 16 to 19 mm) than the following species and, according to REBEL and BETHUNE-BAKER, it also differs from it by the formation of the male genital organ. In the colouring and marking, however, it agrees very closely with *theophrastus*. Island of Sokotra.

*theophrastus*. **C. theophrastus** *F.* (Vol. I, t. 77 i) has been described and figured in Vol. I. As all the specimens from the Ethiopian region, which I have seen, belong to the following species, it is uncertain whether *theophrastus* occurs there.

*mediterraneae*. **C. mediterraneae** *B.-Baker* (74 a) is very closely allied to *theophrastus* and was recently (1917) separated as a distinct species by BETHUNE-BAKER in his „Revision of the Forms of *Tarucus*“. It differs from *theophrastus* in the marking only by the submarginal spots of both wings being streak-shaped and united into a coherent line; sometimes all the spots of the hindwing beneath (except the rounded marginal spots) are light brownish or yellowish instead of black; such specimens are on an average smaller and probably represent the dry season form; the marginal spots 1 c to 5 of the hindwing beneath are decorated with green or silvery scales. According to BETHUNE-BAKER, the species also differs rather much from *theophrastus* by the formation of the male genital organ and is therefore even placed by him to another division of *Tarucus*. Both the species fly together in Algeria. Although it is of course possible, it must still be regarded as a doubtful question whether there are really species solely discernible by the structure of the male genital organ and having quite similar, not deviating females. This question of the variability or eventual dimorphism of the male genital organ can only be solved by the examination of this organ in a great number of ♂♂ originating from the same couple. — The species is before me from Nubia, Khartum, Cordofan, and the Vere Mountains in Adamaua.

*hintza*. **C. hintza** *Trim.* (73 b) forms a distinct transition between the preceding species (*Tarucus*) and the following (*Castalius*), the discal spots being situate like in the former, the submarginal spots like in the latter. ♂. Wings above of a delicate violettish-blue, the markings beneath more or less diaphanous; with small, longish, separate, dark marginal spots, which are larger and black only in 1 c and 2 of the hindwing. The under surface with the normal black markings and nearly all the spots separate, the discal spots 2 to 4 and 6 of the hindwing are rounded and situate near the base of their area; the discal spot 5 of both wings and the discal spot 3 of the forewing, however, are situate far towards the margin close at the submarginal spots; submarginal spots of both wings separate, streak-shaped; marginal spots small and separate, only in the areas 1 c and 2 larger and scaled green; frons white with two short black lines of bristles. The ♀ is beneath similar to the ♂, above blackish, in the centre white with black veins and discal spots, whereby the white colour is divided into several angular spots; both wings at the base almost to the apex of the discal cell covered with bluish. Cape Colony to Nyassa Land and Rhodesia. — **resplendens** *Butl.* from Abyssinia is unknown to me and described according to a ♀; the description does not state any other differences from *hintza*-♀ but the dark submarginal band on the forewing above not being entirely connected with the marginal band.

The following species of this group are easily recognizable by the wings above being in both sexes black and white, without a blue reflection. The white colour forms on the forewing a large anal-marginal or median spot reaching at least to vein 6, and besides also generally 1 to 3 white spots in the dark marginal band. The white median spot also invariably forms a small or larger spot in the discal cell. The hindwing shows a white median band invariably reaching to the proximal margin, often also to the costal margin. The discal spot 5 of the forewing is large, extended towards the margin, but united with the others.



**C. calice** *Hpff.* (73 b) has a moderately large white discal area on the forewing above, reaching *calice*. to the posterior margin or almost to vein 1, forming a frequently very small spot in the discal cell and a long spot in area 3; the white median band of the hindwing does not reach to the costal margin. The under surface deviates from that of the other species by the position of the discal spots 6 and 7 on the hindwing. Congo District: Kassai, Angola, Ovambo Land, Natal, Zulu Land, Mossambique, Nyassa Land, and Rhodesia.

**C. ertli** *Auriv.* is very similar to *calice*, but easily discernible by the marks mentioned in the review. By *ertli*. the large white spot of the posterior margin on the forewing it also strongly recalls *C. carana* *Hew.* (73 c) from which, however, it is at once distinguished by the black transverse streak at the end of the discal cell of the hindwing. Nyassa Land.

**C. melas** *Trim.* (73 b as *melama*) is distinguished by the very much reduced white markings above. *melas*. The white discal spot of the forewing does not reach posteriorly to vein 1 and in front scarcely to vein 6 and in the centre it is almost interrupted by the transverse streak at the end of the discal cell almost touching the black discal spot of area 2 at the base of vein 3. The white submarginal spot in area 5, however, is always large and distinct. The white median band of the hindwing does not reach to the costal margin. Both sexes are similar to each other. In the whole of South Africa as far as Angola, Rhodesia, and British East Africa.

**C. griquus** *Trim.* is only known to me by TRIMEN's description and seems only to differ from *melas griquus*. by the marks mentioned in the review of species. Described according to specimens from the Griqua Land in Cape Colony.

**C. gregorii** *Butl.* (74 a) has on the forewing a large spot of the posterior margin which it reaches com- *gregorii*. pletely and where it is about  $4\frac{1}{2}$  mm broad, anteriorly reaching to vein 6 or 7 and also forming a small spot in the discal cell; the white submarginal spot is large and situate in 4 and 5; the white median band of the hindwing is broad and unspotted or almost unspotted, but it does not reach to the costal margin. On the under surface of the hindwing the discal spots 1 c to 5 are entirely absent or they are only represented by a dot in 2 close in front of the submarginal band; the discal spot 6 is large, round, and is separate about in the centre of the area; the discal spot 7, however, is removed much more towards the base and is more or less completely coherent with the transverse streak at the end of the discal cell. The marginal spots of the forewing are small or absent, those of the hindwing somewhat larger and scaled green in the areas 1 c to 3 or 4. Kilima Ndjaro and British East Africa.

**C. cretosus** is, as the review of the species states, distinguished by the marginal band of the forewing above showing large white spots and the submarginal band of the under surface being complete. It occurs in several forms (local races?) the differences of which have not yet been exactly ascertained. — The typical form **cretosus** *Butl.* originates from Abyssinia; it has above three white spots, the central one of which is much larger, *cretosus*. in the dark marginal band of the forewing, and in the hindwing two linear white transverse streaks outside of the median band and three submarginal streaks near the anal angle; the discal band of the hindwing forms three divisions situate close at the submarginal band, the foremost being composed of two united spots. — In **lactinatus** *Butl.* the black markings are smaller and narrower, and the white colour is accordingly more expanded *lactinatus*. and even forms a white antemarginal line on the forewing above. Somali Land and Kordofan. — Of **nodieri** *Oberth.* *nodieri*. (= *anomalogramma* *B.-Bak.*) a co-type is before me from the Senegal which so exactly corresponds with BAKER's description of *anomalogramma* that it undoubtedly belongs to the same form. From the type it seems to differ by the white submarginal spot in area 2 on the forewing above being united with the large spot of the posterior margin and by the discal spot 5 of the hindwing being entirely absent; in addition, the discal spot 2 of the hindwing is situate farther towards the base than the discal spots 1 b and 1 c. In the only specimen of *cretosus* lying before me, from Kordofan, all the discal spots of the hindwing are present, forming three transverse lines or transverse streaks, one consisting of the spots 1 b to 2, one of the spots 3 to 5, and the third at the costal margin of the spots 6 and 7; the spots 3 to 5 are situate nearer at the margin than the others. I am unable to decide whether these differences are reliable. Senegal. — **usemia** *Neave* I can also only *usemia*. regard as a form of *cretosus*. It deviates from the other forms by the white submarginal spots on the forewing above being reduced, so that there only remains one spot in area 4 and 5; by the absence of the discal spot 5 of the hindwing it corresponds with *nodieri*. British East Africa: Kavirondo and on the White Nile.

**C. carana** *Hew.* (73 c) has the same marking and colouring as *cretosus*, but beside the marks stated *carana*. in the review it deviates by the discal spots not being strigiform but thick and rounded; they are usually contiguous, but they do not form such transverse streaks or transverse bands as in *cretosus*. Cameroon to Angola. — **kontu** *Karsch* (73 c) „is always somewhat larger, and the broad blackish border at the distal margin on both *kontu*. wings above is interrupted by a double row of small white arcuate spots“. In DRUCE's figure of the typical specimen these small arcuate spots are not to be seen on the forewing. On the hindwing they also occur in the typical form. Togo Land.

**C. margaritaceus** *Em. Sharpe* (73 c) is the species in which the white colour is the most extensive *margarita-* and the black markings particularly beneath the least developed. The black marginal band of the forewing *ceus*.



above is broad and unspotted, the transverse streak at the end of the discal cell, however, is very short and does not reach to the posterior angle of the cell, and the base is as far as vein 2 at most black. Hindwing above white, at the base narrow black (only as far as vein 2) and with a narrow black marginal band in which two fine white lines border on the longish black marginal spots. The under surface is described in the review; we may merely add that the black basal streak of the forewing is much shorter than in the other species. It occurs in the mountainous districts of East Africa from the Kilima Ndjaro to Mt. Elgon.

### Sixth Group.

The only species belonging hereto is closely allied to the preceding group and is regarded as a *Castalius* by FRUHSTORFER. But as the eyes are hairy and the hindwing tailless, and besides the ♂♂ exhibit androconia, I think it better to keep up a separate group for *C. isis*. Vein 11 of the forewing is for a long distance entirely fused with vein 12.

The marking beneath also differs rather considerably from that of the forms of *Castalius* by the subbasal spot 1 b of the forewing being absent or appearing only like a shade, and by the hindwing showing behind the middle a broad, coherent submarginal band which must have been created either by the junction of the discal and submarginal spots or by the expansion of the latter. In the latter case the hindwing is entirely without the discal spots.

*isis*. **C. isis** Drury (73 b, c). ♂. Wings above bright light blue; forewing in the centre with a white spot covering the bases of the areas 2 to 4; hindwing above with a white discal band of about 4 mm width, reaching to the costal margin and to the proximal margin and being narrowed near the costal margin by a dark spot in the basal part of area 6. In the ♀ the wings above are black and white, at the base with a faint bluish reflection; the white discal band of the hindwing is like in the ♂; the white spot of the forewing, however, is strongly expanded and reaches to the posterior margin; in addition there is a white subapical spot in 4 and 5, being absent in the ♂. Sierra Leone to Angola, Uganda and Equatoria.

### Seventh Group.

An easily recognizable group. Eyes densely haired. Hindwing without a small tail and above without a white discal band. Vein 11 of the forewing is for some distance fused with vein 12. The basal streak of the forewing beneath is long and broad, usually reaching to the apex of the discal cell, but only at the base purely black, then lighter or darker brown; a transverse streak at the end of the discal cell; the discal spots 3 to 6 (and 9) form an almost straight transverse band; whilst the discal spot 2 is situate more towards the base. The submarginal spots are narrow, strigiform, and generally form a coherent submarginal line. The marginal spots are rounded, separate and sometimes partly indistinct. On the hindwing beneath the basal dots generally form a short streak following the posterior side of vein 8; a transverse streak at the end of the discal cell; the discal spots are sometimes rounded and black, sometimes partly strigiform and lighter or entirely absent. Submarginal and marginal spots like on the forewing.

How very uncertainly the modern so-called genera in which the species of *Cupido* have been distributed are defined, is exhibited also by the fact that many authors have placed *C. eleusis* Dem. into the same genus as *jesous*, denominating the genus sometimes *Lampides* and sometimes *Azanus*. It is not mentioned, however, by which marks this „genus“ is distinguished from the others. *C. eleusis* has bare eyes, vein 11 of the forewing quite separate, and the hindwing tailed, and it also differs in the marking very much from the species of the present group.

### Review of the Species.

A. Forewing beneath with a dark dot in the discal cell opposite the base of area 2. The discal spot 9 of the forewing beneath is, in case it be present, situate right in front of the discal spot 6. The marginal spots 1 c and 2 on the hindwing beneath are strewn with blue scales. Fringes of the wings whitish-grey or grey, often distinctly spotted.

α. The discal spot 3 of the hindwing is larger than the discal spots 4 and 5 which are sometimes entirely absent, and it is situate close at the submarginal line. The discal spot 4 of the forewing is at vein 4 distally more or less extended. The marginal spot 2 of the hindwing beneath is never proximally bordered with yellow or red. *C. natalensis*.

β. The discal spot 3 of the hindwing forms a straight transverse line with the discal spots 4 and 5 and is always smaller than the discal spot 4. The discal spot 4 of the forewing is distally straightly cut off or rounded.

\*. The marginal spot 2 of the hindwing beneath is not proximally bordered with yellow or red. — ♂. Wings above with a dark marginal band of about 1 mm width. — ♀. Wings above brown, in the centre not or indistinctly lighter. *C. moriqua*.



**\*\*.** The marginal spot 2 of the hindwing beneath is towards the base bordered with yellowish or red.  
— ♂. Wings above only with a fine black marginal line.

§. The marginal spot 2 of the hindwing beneath is proximally narrowly bordered with yellowish or orange-yellow. — ♀. Forewing above in the centre lighter whitish.

1. Under surface white or yellowish-white with distinctly prominent black markings.

*C. mirza.*

2. Under surface more greyish-white or brownish-grey. Discal spots 2 to 6 of the forewing and 1 c to 6 of the hindwing brown.

*C. jesous.*

§§. Marginal spot 2 of the hindwing beneath proximally bordered with hemochrome.

*C. rubropuncta.*

**B.** Forewing beneath without a dark dot in the discal cell. The discal dot 9 of the forewing is black and situate much nearer at the base than the discal spot 6; in area 10 there is also a discal dot. The marginal spots 1 c and 2 of the hindwing beneath deep black without blue scales. Fringes of both wings long, uni-coloured white.

*C. ubaldus.*

**C. natalensis** *Trim.* (73 c). ♂. Wings above violettish-blue with a fine black marginal line and feebly *natalensis*. diaphanous markings of the under surface; a black dot at the anal angle of the hindwing. Wings beneath white with black or blackish-brown markings; forewing at the costal margin as far as beyond the centre with broad longitudinal stripes, with a dot in the discal cell, a transverse streak at the cell-end, and seven angular discal spots, of which that in 1 b is narrow and strigiform, that in 2 situate more towards the base, and those of the areas 3 to 6 and 9 are united into an almost straight transverse band being almost vertical towards the costal margin; the submarginal line is narrow and coherent, and the marginal spots are separate. Hindwing with a black transverse streak at the base, black subbasal spots in 1 a, 1 b, 1 c, 7 and in the discal cell, a fine transverse streak at the cell-end and separate rounded discal spots, of which that in area 3 is large and usually situate near the submarginal line (the discal spots 4 and 5 being sometimes entirely absent); submarginal line as in the forewing, marginal spots larger and in the areas 1 c and 2 scaled blue. Frons with two rows of black bristles or almost entirely black with fine white lateral margins. — In the ♀ the wings above are in the centre white or whitish with broad dark margins and distinctly prominent black discal spots; only at the base faintly hued bluish; under surface as in the ♂. It occurs from Natal to Abyssinia, Ruanda and French Congo.

**C. moriqua** *Wallengr.* (73 d) is somewhat smaller than *natalensis* and chiefly only differs by the discal *moriqua*. spots 3 to 5 of the hindwing being contiguous and situate in a transverse line about in the centre between the discal cell and the margin, and by the discal spot 2 being smaller than 3. In the ♂ the dark margin of the upper surface is broader, and in the ♀ the wings are above in the centre lighter but without any other black spots but the transverse spot at the cell-end. Angola to Natal and Delagoa Bay, also on Lake Tchad.

**C. jesous** *Guér.* (73 d, as *ubaldus* U.) has already been described and figured in Vol. I (p. 294, table *jesous*. 77 k). It occurs in the whole of East and South Africa as far as the mouth of the Congo River and not rarely also in South Arabia. — **soalalicus** *Karsch* only differs by the basal dots of the discal cell and of area 7 *soalalicus*. on the hindwing beneath being quite separate and not combined into a transverse line. Madagascar.

**C. mirza** *Plötz* (73 d) is very closely allied to *jesous*, but the ♂ exhibits above a more purely blue *mirza*. ground-colour and beneath black markings on a white or yellowish ground. Sierra Leone to Nyassa Land, German and British East Africa; it is reported to have been found also in Natal and near Delagoa.

**C. rubropuncta** *Lathy.* ♂. Both wings above uni-coloured dull violettish-blue with a fine black marginal *rubropuncta*. line being somewhat expanded at the apex of the forewing, and black fringes. The under surface exhibits a whitish-grey ground-colour and is particularly distinguished by the basal spot in area 7 of the hindwing being separate and rounded and its marginal spot in area 2 being proximally bordered by a hemochrome spot; the longitudinal streak at the costal margin of the forewing is rather indistinct. In the ♀ the wings are above brownish-grey, only at the base and in the centre covered with a light bluish colour, under surface like in the ♂. Madagascar.

**C. ubaldus** *Cr.* (= *zena* *Moore*; *cthoda* *Walk.*; *itea* *Walk.*; *thebana* *Staud.*) (73 d) likes dry districts *ubaldus*. grown with Acacia bushes, and also occurs in Southern Asia and at the frontier of the palearctic region. It has therefore been described and figured in Vol. I (p. 294) and Vol. IX (p. 294, table 153 e). The ♂, the wings of which are above light bluish-violet, is distinguished by a velvet-like darker transverse band being broad on the forewing, triangular on the hindwing, and being formed of ♂ scales. In the ♀ (73 d) the wings are above light yellowish-brown, with a faint violet reflection. Hindwing in both sexes above with distinct black marginal dots in 1 c and 2. The larva lives on species of Acacia. Cape Colony to Somali Land and Nubia, Arabia.



## Eighth Group.

Eyes densely haired: Vein 11 of the forewing separate, almost straight or towards vein 12 more or less bent. Hindwing at the end of vein 2 tailed. Like in many species of *Lycaenesthes* the marking beneath on both wings seems to be very complicated and different from the normal marking of *Cupido*. Like in *Lycaenesthes* it depends on the light border-lines of all the spots being very much expanded and on the spots and the ground-colour exhibiting quite the same dark brown tint. Thereby a great number of dark spots and transverse bands are created on a white or lighter ground. These dark markings are very variable and need not be described here at large. The forewing beneath invariably shows a dark longitudinal ray from the base along the posterior side of vein 12, at least as far as vein 11. The hindwing has beneath rounded, jet-black, blue-scaled marginal spots surrounded by an (orange-)yellow ring in 1 c and 2, and rounded or strigiform marginal spots in 3 to 6; the submarginal line is coherent and formed of bows or transverse streaks; not rounded, jet-black basal dots. The arrangement of the discal spots on the forewing is best seen on the upper surface of the ♀.

## Review of the Species (or Forms).

- A. Marginal spot 1 c of the hindwing beneath separated from marginal spot 2 by a white or whitish streak along the posterior side of vein 2. The proximal white bordering of the submarginal line in both wings irregular and more or less interrupted. Discal spots 4 and 5 not strigiform, more or less thickened and irregular.
- α. ♂. Wings above light bluish-violet; the dark markings beneath distinctly showing through. — ♀. Both wings above more or less spotted white or at least with white-edged discal spots. *C. telicanus*.
- β. ♂. Wings above dark bluish-violet, not transparent. — ♀. Wings above without white markings. Forewing above at least as far as the discal spots 4 and 5 blue. *C. rabefaner*.
- B. The thick yellow rings of the marginal spots 1 c and 2 on the hindwing beneath contiguous. The proximal white bordering of the submarginal line on both wings beneath coherent and almost equally broad, towards the base bordered by a likewise coherent dark transverse line of the ground-colour. The discal spots 4 and 5 form together a narrow, straight, transverse streak being vertical towards the veins. *C. socotranus*.

*telicanus*. **C. telicanus** Lang has already been described and figured in Vol. I (p. 293, t. 77 h). The typical form I do not know from the Ethiopian region, although it is approximated by some specimens particularly from *plinius*. the mountain-districts. — **plinius** F. (Vol. IX, t. 153 b) is distinguished by the lighter, almost white colour of the under surface and the smaller dark markings of it. In the ♀ both wings above are spotted white and especially the dark discal spots of the forewing surrounded by white. In the whole of Africa and all the islands. — var. *insulanus*. **insulanus** Auriv. The under surface differs so much that it makes quite a strange impression; the dark (grey) markings are so extensive that the white colour is only prominent as fine border-lines of them. ♀ above quite *marginalis*. uni-coloured grey without light markings. Island of Europa (in the Mozambique Channel). — ab. ♂ **marginalis** ab. nov. Both wings above with a blackish marginal band of 2 mm width. Ruwenzori.

*rabefaner*. **C. rabefaner** Mab. approximates the typical European *C. telicanus* (Vol. I, t. 77 h) and only differs by the marks stated in the review. The ♂ was also in fact figured as *telicanus* by MABILLE (in GRANDIDIER's work). On an average smaller than *C. plinius* and beneath much darker. — ♀. Forewing above blue at the costal margin as far as the discal cell, and at the margin broad blackish; the black discal spot and the discal spots 2 to 5 are very distinctly prominent on the blue ground. Hindwing above in the discal cell and the areas 1 c to 4 as far as the submarginal line light greyish-blue; marginal spots very distinct, in 1 c to 4 towards the base bordered with blue. Whether this form is a separate species or a race of *C. telicanus*, can only be decided by breeding and by the examination of the ♂ genital organ.

*socotranus*. **C. socotranus** Grant is above very similar to *C. telicanus* v. *plinius*, but beneath easily recognizable by the marks stated in the review. The ♀ is above blackish-brown without discal spots and without white spots of the forewing; the latter are only at the base as far as vein 8 bluish-violet. Hindwing as far as beyond the middle hued with violet, with distinct black marginal spots bordered with white. Island of Sokotra.

## Ninth Group.

(*Nacaduba*-Group.)

This group, in the marking beneath, forms an evident transition between the preceding and following groups by the forewing sometimes exhibiting beneath whitish transverse streaks in area 12.



The spots beneath are not or hardly darker than the ground-colour and therefore only recognizable by the fine whitish streaks by which they are bordered on both sides. A very characteristic mark is also that each spot is parted in two by a fine (often indistinct) light median line. The basal spots of the hindwings are usually only represented by a short streak at the base of vein 8, whereas the subbasal spots form a coherent transverse band. The discal spots are large and broadly contiguous; the spots 4 and 5 are in both wings somewhat nearer to the margin than the others, and the spots 6 and 7 of the hindwing vertical towards the costal margin. The under surface only shows two (or three) black dots, the marginal spots in the areas 1 c and 2 (and 3) of the hindwing, which are surrounded by whitish, sometimes by metallic margins. Above these dots are generally entirely absent. Delicately built species with thin wings.

#### Review of the Species.

A. The spots beneath not darker than the ground-colour. Marginal spots 1 c and 2 of the hindwing beneath not bordered with yellow towards the base.

α. Wings above uni-coloured black without markings and without a blue reflection. *C. aethiops*.

β. Wings in the ♂ above uni-coloured dark violettish-blue, in the ♀ greyish-brown with a blue basal area of the forewing. *C. sichela*.

B. The spots beneath distinctly darker than the ground-colour. The black marginal spots of the areas 1 c to 3 on the hindwing beneath proximally bordered with yellow. *C. mandersi*.

**C. aethiops** *Mab.* (73 d) deviates from all the other Ethiopian species of *Cupido* by the uni-coloured black upper surface and the white-striated under surface. The ♀ which is not before me, according to HOLLAND, does not differ from the ♂. Gabun to Congo (and Abyssinia?). *aethiops*.

**C. sichela** *Wällengr.* (73 d) is easily recognizable by the above-mentioned marks. From Sierra Leone to Cape Colony and East Africa; also in Madagascar. *sichela*.

**C. mandersi** *Ham. Druce* is only known to me by the description and by the figure supplied by MANDERS. As DRUCE does not state whether vein 11 of the forewing is separate or not, the position of this species is not quite certain. The spots beneath are evidently darker and more distinct than in the preceding species, but apparently arranged in the same way. About the habits and stages MANDERS gives the following statement: Their way of flying is quite different from that of the other Lycaenids occurring in Mauritius; it flies high above the ground and often engages in furious fights with others of its species. — The eggs are flat, light green, and are deposited on the under surface of young leaves of *Caesalpinia bonducella*. The larva is at first greenish-white with white hairing, in its demi-adult stage light apple-green with a yellow line on both sides of the dorsum and a similar line at the spiracles. When being fully developed it attains a length of 10 mm and changes in the colour from a light green to brownish-green with a reddish hue, and also shows reddish longitudinal lines. Head black. Pupa light reddish-grey with purple-red markings. Mauritius. *mandersi*.

#### Tenth Group.

(*Lampides*-Group.)

This group was formerly denoted by SCUDDER (1878) and MOORE (1881) as *Polyommatus*. Now this name is much more correctly (comp. the signification of *Polyommatus*, many-eyed) used for *C. icarus* and allied forms. HÜBNER's name *Lampides* is now used for this group.

The marking beneath at first sight makes a strange and different impression, but it is in fact rather normal, if one notices that all the discal spots and also most of the basal spots are divided into two halves by a thick white transverse streak. One discal spot consequently consists of four transverse streaks, a white one in the centre, on each side a brown streak and a thick white border-line. The distal border-lines of the discal spots form in the hindwing a distinctly prominent, almost straight, white transverse band from the proximal margin to the costal margin. A spot in the discal cell of the forewing. But one African species.

**C. boeticus** *L.* (Vol. I, p. 290, t. 77 h). Hindwing above with black marginal dots in 1 c and 2. ♂. *boeticus*. Wings above light violettish-blue with a fine black marginal line. ♀. Wings above grey with a blue reflection in the centre. In the whole of Africa and Arabia, and in all the islands. — Larva in the fruits of Leguminosae (vid. Vol. I, p. 291 and Vol. IX, p. 895).

#### Eleventh Group.

(*Cyclurius*-Group.)

Eyes hairy. Vein 11 of the forewing separate. Hindwing tailless. The spots beneath are generally only prominent by their light bordering and are sometimes almost entirely effaced in the forewing. Forewing

normal with a large spot in the discal cell. The basal spots of the hindwing are indistinct, but the subbasal spots numerous (5 or 6) and almost form a transverse band. The discal spots are large and combined into a usually almost straight transverse band; the discal spot 7 in such species being situate just as near at the margin as the discal spot 6. Another peculiarity of the group is that the black marginal spot in area 1c of the hindwing is almost invariably absent. The species seem to prefer mountainous districts and some are evidently alpine dwellers.

#### Review of the Species.

A. The discal spot 7 of the hindwing is not situate nearer at the base than the discal spot 6. The discal band is therefore almost straight.

α. Fringes of the wings not speckled.

\*. Hindwing beneath with a greyish-brown ground-colour. Forewing beneath with distinct though not sharply prominent markings.

1. Marginal spot of area 2 on the hindwing small, punctiform or entirely absent. — ♂. Wings above brown, only at the base as far as the apex of the cell covered with violettish-blue. *C. tsomo*.

2. Marginal spot of area 2 on the hindwing large and jet-black. — ♂. Wings above light violettish-blue; forewing with a broad, hindwing with a narrow dark marginal band. *C. noquasa*.

\*\*. Hindwing beneath with a whitish ground-colour and sharply prominent markings. Forewing beneath with an entirely effaced marking. *C. kisaba*.

β. Fringes of the wings spotted white and black.

\*. Hindwing beneath without a white transverse band. — ♂. Wings above light blue with a dark marginal band. *C. notoba*.

\*\*. Hindwing beneath behind the middle with a white, coherent or in the centre interrupted transverse band, lighter whitish at the costal margin between the discal band and the subbasal spot in area 7 as well as in the anterior longitudinal half of the discal cell. Marginal spot of the hindwing surrounded with yellowish.

1. Smaller, 18 to 20 mm. — ♂. Wings above blue with a narrow black marginal band *C. aequatorialis*.

2. Larger, about 25 mm. Wings above from the base to beyond the middle with a violet or blue reflection, at the margin very broad brown. *C. juno*.

B. The discal spot 7 of the hindwing is much farther remote from the margin than the discal spot 6. Fringes of the wings spotted white. *C. crawshayinus*.  
*C. subditus*.

*tsomo*. **C. tsomo** Trim. Wings in both sexes above dark brown, in the ♂ in the basal part with a bluish reflection, in the ♀ almost uni-coloured brown. Wings beneath with a grey ground-colour and with spots bordered by whitish. Markings of the forewing dull, but not effaced; discal band of the hindwing towards the margin bordered by a dull, whitish-grey transverse band. Cape Colony and Caffraria.

*noquasa*. **C. noquasa** Trim. (74 g) is very closely allied to *tsomo* and differs, except by the marks stated in the review, also by the light border-lines of the discal spots beneath and the light transverse band of the hindwing being whiter and thereby more prominent. Cape Colony, Natal, and German East Africa.

*kisaba*. **C. kisaba** Joic. & Talb. has of late (1921) been described as a *Catochrysops* and is only known to me by the description and figure. The description runs, somewhat abridged, as follows: above dark blackish-brown without any other markings but a small, rounded, black marginal spot in area 2. Forewing beneath light ochreous-brown with an indistinct spot in the centre and at the end of the cell and a similar marginal line. Hindwing beneath with a white ground-colour and sharply defined dark brown markings. The basal area is covered with white hair; a basal spot in 7, another in the cell and in 1 b; a subbasal spot in 7, another in the posterior part of the discal cell and a third between vein 2 and the proximal margin; the discal band is coherent and consists of 9 spots of which that in 4 is longer extended towards the margin and that in 2 is somewhat nearer to the base than the others; a round, black marginal spot curled orange and brown is in 2; a brown marginal spot in 3. It was captured by F. A. BARNES in the Kisaba Forest, to the east of Lake Kivu, at an altitude of 2200 m.

*notoba*. **C. notoba** Trim. has a brownish-grey, somewhat yellowish under surface with a normal number of somewhat darker spots being prominent owing to the white border-lines. In the ♂ both wings above are light blue as far as the narrow marginal band, in the ♀ only in the basal part with a blue reflection. Cape Colony to Transvaal.



**C. aequatorialis** *E. Sharpe* (73 d). The dark marginal band of the forewing above is in the ♂ sharply *aequatorialis*. defined and about 2 mm broad at the apex of the wing, gradually tapering off posteriorly. In the ♀ the wings above are dark brown with a blue longitudinal ray in area 1 b of the forewing and some blue colour at the base of the hindwing. The white transverse band on the hindwing beneath is not interrupted. On the East African mountains, such as Mt. Elgon (8500 ft.), Ruwenzori, Kenia, Kilimandjaro (3000 to 4000 m), and Birunga (2900 m). — ab. **sharpiae** *Butl.* only differs in the white transverse band of the hindwing beneath being in the centre *sharpiae*. interrupted by the distal prolongation of the discal spot 4.

**C. juno** *Butl.* (73 e) is very near to *aequatorialis* and only differs in the marks stated in the review. *juno*. In the ♀ the wings above are dark brown with a blue longitudinal ray in area 1 b of the forewing and a little blue at the base of the hindwing. In the nomenclatural form the markings of the forewing beneath are distinct. Nyassa Land. — **meruanus** *Auriv.* Forewing beneath monotonously coppery-brown without distinct *meruanus*. markings, the apex and a thin marginal line being whitish; of the transverse markings of the discal cell and the discal spots of the typical form only traces are noticeable in a certain light. The white postdiscal band of the hindwing beneath is sometimes coherent, sometimes interrupted in the centre. Mt. Meru.

The two following species I have not been able to examine. Although the discal spot 7 of the hindwing shows quite a different position, yet I believe that they belong to the *Cycliarius*-group. The two forms are evidently closely allied to each other and may be only the races of one species. They are also distinguished by the subbasal spots of the hindwing being darker encircled with a light colour and thereby much more distinctly prominent than in the other species of this group. The discal band of the forewing which runs otherwise rather parallel with the margin, is here slanting and narrower. Wings above almost uni-coloured dark brown, at the margin darker, at the base with or without blue scales (this is said to be the ♂). Hindwing at least beneath with a round black marginal spot in area 2. Both species were listed in the „genus *Scolitantides*“ by their authors.

**C. crawshayinus** *nom. nov.* (= *crawshayi* *Butl.*). Wings beneath with a brown ground-colour and *crawshayinus*. white-ringed spots. Forewing with a spot in the discal cell and at the apex of it; the discal spots 1 b to 6 form a straight discal band touching the posterior angle of the discal cell, a discal spot in 9 is situate more towards the base; two whitish, arcuate submarginal lines. Hindwing with subbasal spots in 1 c and 7, a transverse spot at the cell-end, and large blackish discal spots in 4 to 6 and 7; the discal spots 2 and 3 seem to be removed by a broad white line which is broken in a sharp angle at vein 2. (Described in accordance with BUTLER's figure). British East Africa: Machakos.

**C. subditus** *G. Smith.* „♂. Upper surface similar to *S. crawshayi* *Butl.*, but somewhat larger; the fringes *subditus*. of the forewings are less distinctly spotted white, and the hindwing shows in area 2 a black marginal spot which is surrounded by an indistinct light ring. Under surface: forewing distinguished from that of *S. crawshayi* by the first discal spot (in 1 b) being double and distally curved, and by the absence of the discal spot in 9 and of the spot in the discal cell. Hindwing with an irregular transverse band (discal band) of brown spots which are differently arranged from those in *S. crawshayi*; the V-shaped white streak is represented by a dull grey band, and the fringes are grey with indistinct brown spots.“ British East Africa: Nandi.

## Twelfth Group.

### *Brephidium*-group.

Eyes bare. Hindwing rounded off without a small tail. Forewing with 11 veins; vein 8 is absent and vein 11 is soon completely fused with vein 12. Frons white with two rows of black bristles. Palpi beneath with bristly hairs.

The „genus“ *Brephidium* was established for two North American species which, in fact, are very similar (Vol. V, p. 820, pl. 144 k). How it is possible that these little blue insects occur both in North America and in South Africa, is a geographical problem of the greatest interest.

**C. metophis** *Wallengr.* (73 e) is above uni-coloured dark brown with white fringes which, at least in *metophis*. the forewings, are spotted brown; hindwing with 5 black marginal dots, of which those in 1 c and 2 are often yet proximally bordered by a white spot. Wings beneath with a greyish-brown ground-colour and similarly coloured spots, which are only prominent owing to their thick white border-lines. Forewing beneath as far as the apex of the cell without markings, then with 14 white transverse streaks and two rows of white submarginal streaks. Hindwing beneath similar, but also in the basal part with white transverse streaks, and at the margin with 4 to 6 jet-black round spots covered with metallic scales. South Africa from Damara Land to Delagoa Bay.

**Thirteenth Group.***Oraidium*-group.

Eyes bare? Hindwing rounded off without a small tail. Forewing with but 10 veins, veins 8 and 9 being absent; vein 11 runs separately.

The only species belonging hereto is so similar to *C. metophis* that even BUTLER declared it to be merely a form of it. But as the forewing shows a different venation and the male genital organ, owing to BETHUNE-BAKER's examination (1914), is also different, I have decided to retain this group. The species not being at hand, I have not been able to examine the eyes.

*barberae*. **C. barberae** Trim. is the smallest of all the species of *Cupido* in Africa. Wings above dark brown with long, white fringes which are spotted brown at the ends of the veins. Wings beneath marked almost as in *C. metophis*, but the spots somewhat darker than the ground-colour. Forewing in area 9 (between the veins 7 and 10) with a discal spot which is absent in *metophis*. Hindwing almost as in *metophis* and with the same large, black marginal dots in 2 to 5; the subbasal dots are darker and more distinct than in *metophis*. Cape Colony to Natal.

**Fourteenth Group.***Neochrysops*-group.

The species of this group, as BETHUNE-BAKER has shown, are very closely allied to those of the following group, but they differ so much in the marking beneath that I regard them to be a separate group.

Eyes pubescent. Palpi with appressed scales; second joint beneath without or with but few bristly hairs. Frons white or in the centre yellowish; the rows of bristles are but feebly developed. Vein 11 of forewing separate and almost straight; vein 7 terminates into the apex of the wing. The under surface at least partly shows a yellowish ground-colour and in all the species a similar marking. Forewing beneath as far as the apex of the discal cell without spots; central spot black and moderately large or (♀) very large; the 5 to 7 discal spots (in [1 b], 2 to 6 [9]) are arranged in such a way that the spots 1 b and 4 are nearer to the margin than the others; all of them are separate and with or without a white ring; marginal area without markings or with a black submarginal line (or such streaks) and indistinct marginal spots. Hindwing beneath with 4 roundish black subbasal dots in 1 a, 1 b, 7, and in the discal cell (the dot in 1 e seems to be always absent), a large central spot and seven separate, almost rounded, black, often white-encircled discal spots, those of the areas 1 e and 4 being nearer to the margin than the others, whilst that in 7 is situated more towards the base at the centre of the costal margin. The submarginal line sometimes consists of (orange-)yellow bows or streaks in 1 e and 2 and of black ones in 3 to 7, or it is sometimes diffuse and quite yellowish. The marginal spot in 2 and sometimes also in 1 b is black with blue scales, the others are indistinct, yellowish or quite diffuse. The black marginal line and the fringes, which are jet-black at the base, on both sides form a distinct bordering of the surface of the wings. The markings of the under surface show through above in all the species and in both sexes.

## Review of the Species.

A. Forewing beneath with a distinct black submarginal line or submarginal streaks.

α. Large species with an expanse of 50 to 64 mm. — ♂. Wings above of a bright violettish blue with a black marginal spot in area 2 of the hindwing.

\*. Hindwing at vein 2 with a tail. Discal spot 4 of forewing elongate, transverse, extended towards the margin. Hindwing beneath in area 1 e with a transverse, green-sealed marginal spot and a black submarginal streak. *C. giganteus*.

\*\*. Hindwing without a tail. Discal spot 4 of forewing roundish, similar to the spots of the areas 3 and 5. Hindwing without the black marginal spot in area 1 e. *C. stormsi*.

β. Smaller species with an expanse of 35 to 45 mm. Hindwing without a tail.

\*. Discal spot 4 of forewing elongate and of a slanting position.

1. Hindwing beneath without a black marginal spot in area 1 e. — ♂. Both wings above of a soft greyish-blue.

a. ♂. Forewing beneath only with 4 discal spots (in 3 to 6). *C. rhodesensis*.

b. Forewing beneath with 6 discal spots (in 1 b to 6). *C. delicatus*.

2. Hindwing beneath with a black, green-sealed marginal spot in area 1 e. — ♂. Both wings above light brownish-grey without a blue reflection. *C. peculiaris*.



**\*\*.** Discal spot 4 of forewing rounded off like the others. Hindwing beneath without the black marginal spot in area 1 c. — ♂. Wings above uni-coloured brownish-grey, with narrow black median spots and an indistinct black marginal spot in area 2 of hindwing. *C. neuvei*.

**B.** Forewing beneath without submarginal streaks and marginal spots.

**α.** Hindwing without a tail; beneath without a marginal spot in area 1 c. — ♂. Wings above light greyish-blue with a small marginal spot in area 2 of the hindwing. *C. mashunus*.

**β.** Hindwing at vein 2 with a tail, on both sides with a black, green-scaled spot in area 1 c. — ♂. Wings above of a bright coppery brown. *C. cupreus*.

All the ♂♂ have male scales (androconia) of the usual shape and with a broadly rounded off apex.

The ♀♀ of all the species are above similarly coloured and marked. They are above light blue with dark veins, at the costal margin on both wings as far as the discal cell brown and with a broad dark marginal band which, however, is generally more or less brightened up by the white bordering of the large roundish marginal spots. The median spots are large and very distinct. The dark submarginal band is distinct also in case it be absent beneath.

**C. giganteus** Trim (74 a) is the largest African species of *Cupido* and is known from the Mashona *giganteus*. Land, Rhodesia, and the district of the Victoria-Nyanza.

**C. stormsi** Robbe (74 b) is very similar to the preceding, but at once discernible by the marks stated *stormsi*. above. Southern Congo District and on Lake Tanganyika.

**C. rhodesensis**(ae) B.-Bak. Only the male is known. The submarginal line of the under surface is dull *rhodesensis*. grey or yellowish and indistinctly defined. North-Eastern Rhodesia.

**C. delicatus** B.-Bak. (74 b) is very similar to *rhodesensis*, but it also differs in the submarginal line *delicatus*. beneath being more distinct and blackish. The ♀ is above also at the hind-margin of the hindwing broadly darkened and sometimes almost totally brown. Nyassa Land and Portuguese East Africa.

**C. mashunus** Trim. The ♂ is above very similar to the two preceding species. Mashona Land. *mashunus*.

**C. peculiaris** Rogenh. (74 d, e) is the species of this group, which was known first, and distinguished *peculiaris*. from the other species by the dark upperside of the ♂. Distributed from Rhodesia, Nyassa Land and Manica Land to Mombasa and Nairobi in British East Africa.

**C. neavei** B.-Bak. can only be distinguished from *C. peculiaris* by the above-mentioned marks. Nyassa *neavei*. Land and Portuguese East Africa.

**C. cupreus** Neave (74 e) is a species well distinguished by the small tail of the hindwing, the absence *cupreus*. of the markings at the margin of the forewing beneath, and by the colouring of the upper surface in the ♂. North-Eastern Rhodesia.

### Fifteenth Group.

#### *Euchrysops*-group.

BETHUNE-BAKER has published this year a most excellent monography on the African species of this group, in which he distributes them among two „genera“ *Neochrysops* B.-Baker and *Euchrysops* Butl. In spite of my having carefully compared the descriptions of the two genera with each other, I have not succeeded in finding any solid difference between these „genera“. Nor does the author state any differences with respect to the genital organ of the ♂ and the androconia, and the comparison of the figures neither supplies any clues for the separation of the genera. The harpagines may apparently differ amongst the species of the same genus just as much as they do between the species of the two genera; the same is the case with the androconia.

BUTLER's genus *Euchrysops*, moreover, is something different from that of BETHUNE-BAKER. BUTLER characterizes his genus: „Secondaries invariably tailed“ and „eyes quite smooth instead of hairy“. Though BETHUNE-BAKER also says in the description of the genus: „A short fine tail from the end of vein 2“, yet he places several tailless species, such as *albistriatus* and *malathana*, to *Euchrysops*. He also reckons some species with hairy eyes among this genus. As I myself was neither able to discover any essential differences between „*Euchrysops*“ and *Neochrysops*, I was forced to combine them here in one group with the exception of the species of the fourteenth and sixteenth groups.

Eyes hairy or bare. Frons white with two rows of black bristles. Palpi covered with appressed scales, generally with none or but few black bristles on the underside of the second joint. Forewing with 11 veins (vein 8 being absent), vein 11 being quite separate and almost straight. The marking beneath is very characteristic and rather similar in all the species. Forewing as far as the apex of the discal cell without markings; a white-edged, brown transverse streak or spot at the end of the discal cell; discal spots generally roundish, encircled with white and contiguous; submarginal streaks and marginal spots distinct and bordered with white. Hindwing without basal dots, but invariably with 3 round, jet-black subbasal dots encircled with white in 1 a, 7, and

in the discal cell, sometimes also with such a dot in 1 c. The discal spots in 1 b and 7 are almost invariably jet-black, roundish and encircled with white, just like the subbasal dots; they are also separated from the other discal spots which are lighter or darker brown, surrounded with white and, at least by the white rings, united into an irregular transverse band. The submarginal and marginal spots are distinct, the former generally towards the base bordered by large, triangular or coniform, white spots. The marginal spot in area 2 is black, roundish, with metallic scales and generally inwardly bordered by yellow.

#### Review of the Species.

- I. Discal spots of hindwing varying from dark brown to blackish; the discal spots 4 and 5 or at least the discal spot 4 transverse, long and quadrangular, rectangular, not rounded off, touching the median spot or altogether united with it. Eyes hairy.

##### A. Hindwing rounded off without a tail.

α. Fringes of the wings white with dark spots at the ends of the veins. The discal band of the forewing extends nearer to the discal cell than to the margin.

\*. Wings above uni-coloured blackish-brown without blue. Frons and second palpal joint densely clothed with long black bristles.

1. The white spots of the fringes are almost as large or larger than the dark ones. Margin without white dots. *C. methymna*.

2. The white spots of the fringes of the wings are small, punctiform, and above accompanied by a minute white marginal dot. *C. puncticilia*.

\*\* . Wings above entirely (♂) or at least at the base blue. *C. ortygia*.

β. Fringes of the wings not spotted. Wings above at least in the basal part blue. Discal band of forewing nearer to the margin than to the discal cell. *C. grahami*.

##### B. Hindwing at the end of vein 2 tailed. Fringes of the wings not speckled. Wings above in the ♂ entirely blue, in the ♀ only in the basal part.

α. Wings beneath with a white ground-colour. The subbasal spot in the discal cell of the hindwing elongate, almost streak-shaped. *C. reichenowi*.  
*C. pampolis*.

β. Wings beneath of a brownish-grey ground-colour. The subbasal spot in the discal cell of the hindwing is rounded off.

\*. Discal spot 4 of forewing not larger than those in 3 and 5 and entirely separated from the median spot. Discal spot 1 b of forewing double, but smaller than the others. — ♂. Wings above lustrous pale violettish-blue with a very fine black marginal line. *C. asteris*.

\*\* . Discal spot 4 of forewing long, transverse, reaching to the median spot; discal spot 1 b single, as large or larger than the others. — ♂. Wings above dull violettish blue; forewing with a dark marginal band of at least 1 mm width. *C. trimeni*.

- II. Discal spots 4 and 5 of hindwing always entirely separated from the median spot, generally brown and rounded off, rarely blackish or somewhat transverse and angular.

##### A. Hindwing beneath without a black marginal spot in the centre of area 1 c, either without any marginal spot in 1 c or only with 1 or 2 black dots. If there is only one dot, it is situate close at vein 1 b. Eyes hairy, rarely bare, hindwing in this case, however, not tailed.

α. Hindwing tailed at vein 2.

\*. Discal spots 4 and 5 of hindwing larger than the other discal spots, somewhat transverse, quadrangular, blackish or dark brown.

o. Hindwing without a subbasal dot in area 1 c; above without a distinct yellow bordering of the marginal spot in 2. *C. intermedius*.

oo. Hindwing with a distinct subbasal dot in area 1 c; above with a distinct proximal yellow bordering of the marginal spot in 2. *C. neonegus*.

\*\* . Discal spots 4 and 5 of hindwing rounded off, not or hardly larger than the others, lighter than the subbasal dots.

o. Hindwing with a subbasal dot in area 1 c.

†. Expanse of wings: 48 to 54 mm. — ♂. Both wings above uni-coloured greyish-brown without a blue reflection. *C. plebejus*.

††. Expanse of wings about 25 mm. — ♂. Wings above bright pale blue. ? *C. elicola*.



- oo. Hindwing without a subbasal dot in area 1 c. — ♂. Wings above of a bright blue, green or violet.
- †. Expanse of wings 30 to 54 mm.
- ×. Wings above with a green reflection. *C. chloauges.*
  - × ×. Wings above lighter or darker blue or violettish-blue.
    - . Wings above light silvery blue. *C. glaucus.*
    - —. Wings above varying from blue to violettish-blue.
  - §. Hindwing beneath at most with a black marginal dot proximally bordered with yellow in area 1 c.
    - + . Hindwing beneath without any black marginal dots in area 1 c.
      - 1. A larger species, 44 to 48 mm. Discal spots 1 b to 4 of forewing in an almost straight transverse row. — ♂. Hindwing above without a transverse streak at the end of the discal cell. *C. quassi.*
      - 2. A smaller species, 34 to 39 mm. Discal spots 1 b to 4 of forewing not arranged in a straight transverse row. — ♂. Hindwing above with a fine black transverse streak at the end of the discal cell. *C. variegatus.*
    - + +. Hindwing beneath in area 1 c close at vein 1 b with a black, green-scaled marginal dot which is bordered with yellow towards the base. — ♂. Hindwing above without a dark transverse streak at the end of the discal cell.
      - 1. Subbasal dot 1 a of hindwing large and distinct. Discal spots of forewing rounded off. — Larger species of 40 to 54 mm.
        - a. ♂. Hindwing above without any distinct marginal spots surrounded with a light colour in the areas 3 to 6. *C. patricius.*
        - b. ♂. Hindwing above with distinct marginal spots surrounded with a light colour in the areas 3 to 6. *C. aethiopia.*
      - 2. Subbasal dot 1 a of hindwing absent or minute. Discal spots 2 and 3 of forewing elongate, somewhat streak-shaped; discal spot 6 is situated far behind the base of vein 9. A smaller species of 30 to 34 mm. *C. barkeri.*
  - §§. Hindwing beneath with two black marginal dots proximally bordered with yellow in area 1 c; the yellow bordering also above forms a large yellow transverse spot between the veins 1 b and 2. *C. carsoni.*
- ††. Expanse of wings only 20 to 28 mm.
- 1. Wings above not light silvery grey. *C. antoto.*  
*C. masai.*
  - 2. Wings above light silvery greyish-blue. *C. naidina.*
- β. Hindwing rounded off, not tailed.
- \*. The discal spot in area 1 b of hindwing black and punctiform.
  - §. Hindwing at least with two black subbasal dots encircled with a light colour (in 7 and in the discal cell).
    - †. Hindwing above without a broad orange marginal band between the anal angle and vein 4 or 5.
      - o. Wings at least in the ♂ above uni-coloured greyish brown or dark brown without any blue or violet, with or without a marginal spot in area 2 of the hindwing.
      - + . Hindwing beneath without a subbasal dot in area 1 c.
        - ×. Wings above varying from dark brown to blackish-brown; the markings of the underside do not show through above in the ♂.
          - 1. Underside with a brownish-grey or blackish-grey ground-colour. ♂♂ similar to the ♀♀. Smaller species, 33 to 40 mm. *C. lerothodi.*  
*C. skotios.*  
*C. letsea.*

2. Underside with a grey ground-colour. The ♀♀ above in the basal part covered with blue and with distinctly prominent black discal spots on the hindwing above. Large species, 40 to 48 mm.  
*C. victoriae*.
- × ×. Wings above greyish-brown with markings showing through from beneath.  
*C. cinereus*.
- + +. Hindwing beneath with a black subbasal dot in area 1 c. *C. parsimon*.
- oo. Wings in both sexes above entirely or for a great part blue or violet. Hindwing generally without a subbasal dot in area 1 c.
- + . Discal spots of forewing large, jet-black, quite roundish and arranged in a uniformly bent line.  
*C. abyssinicus*.
- + +. Discal spots of forewing not jet-black, of the usual size, and more or less irregularly arranged.
- ×. Larger species with an expanse of 38 to 50 mm.
- . Hindwing at least beneath with a large black, rounded marginal spot proximally broadly bordered with yellow in area 2.
1. All the discal spots of the hindwing rounded and almost black; those in 1 c to 6 contiguous. *C. dollmani*.
2. The discal spots of the hindwing not or but little darker than the ground-colour.
- a. ♂. Wings above with a blue ground-colour.
- a'. ♂. Forewing above only with a dark marginal line.
- a''. Underside with a brownish-grey ground-colour.  
*C. synchrematizus*.
- b''. Underside with a whitish-grey ground-colour.  
*C. polydialectus*.
- b'. ♂. Forewing above with dark marginal spots proximally bordered with a light colour. *C. negus*.
- b. ♂. Wings above violettish-red or dark with an intense violet reflection.
- a'. ♂. Wings above dull greyish-violet with a fine dark marginal line. *C. pteron*.
- b'. ♂. Wings above reddish-violet with a fine dark marginal line. *C. solwezii*.
- c'. ♂. Wings above brown with an intense violet reflection.  
*C. jefferyi*.
- —. Hindwing beneath in area 2 with a small marginal spot which is proximally pointed and not or hardly bordered with yellow.  
*C. hypopolia*.
- × ×. Smaller species with an expanse of wings of 25 to 30 mm.
- c. Hindwing without a subbasal dot in area 1 c.
- . ♂. Forewing above as far as the costal margin blue or violet with or without a dark marginal band.
1. ♂. Forewing above without a dark spot at the end of the discal cell.  
*C. dolorosus*.  
*C. subpallidus*.  
*C. mauensis*.
2. ♂. Forewing above with a dark transverse streak or transverse spot at the end of the discal cell.
- a. The orange proximal border of the marginal spot 2 of the hindwing beneath also forms a transverse spot in area 1 c.  
*C. albistriatus*.  
*C. katangae*.
- b. Hindwing beneath without any yellow colouring before the margin in area 1 c. *C. procerus*.



— —. ♂. Forewing above at the costal margin as far as the discal cell or somewhat into it and at the distal margin very broadly dark brown. *C. nandensis*.

cc. Hindwing with a subbasal dot in area 1 c. *C. latrunculus*.

††. Hindwing above with a broad orange marginal band between the anal angle and vein 4 or 5. Wings above dark brown without a blue or violet reflection. Expanse of wings: 24 × to 28 mm. *C. kabrosae*.

§§. Subbasal dots of hindwing absent (♂) or very minute (♀). *C. nevillei*.

\*\* The discal spot in area 1 b of the hindwing neither black nor punctiform, entirely coloured and shaped like the discal spots 1 c to 6. *C. malathana*.

B. Hindwing beneath in the centre of area 1 c with a black marginal spot which is scaled blue or green, proximally bordered with yellow, just as large or slightly smaller than the marginal spot in area 2. Hindwing tailed at the end of vein 2. Eyes bare. — *Euchrysops Butl*.

α. Wings above at least partly violet or blue.

\*. ♂. Forewing above almost to the margin of a delicate reddish violet. *C. osiris*.

\*\*. ♂. Forewing above blue with a broad, posteriorly widening, blackish marginal band. *C. cyclopterus*.

β. Wings above brown with a slight reddish hue and a faint bronze reflection. *C. brunneus*.

In some of the smaller species of the division II, A. β, § oo, ††, × × which I was able to examine, vein 11 of the forewing is not straight but somewhat bent towards vein 12. They differ, however, from the species of the groups 18, 19, 21, and 22 in the hairy eyes.

**C. methymna** Trim. (74 b) is easily recognizable by the marks mentioned above. The discal spots *methymna* of the forewing are smaller and rounded or larger and in area 4 united with the median spot. The discal spots 4 and 5 of the hindwing are elongate and entirely united with the median spot; the submarginal spots 3 to 5 are long, coniform, towards the base bordered by sharply angular white bows; marginal spot 2 small, black, with some green scales, generally occurring also above as a black dot. Cape Colony to Natal.

**C. puncticilia** Trim. (73 h) differs also from *methymna* in the discal spots of the forewing being much *puncticilia* more indistinct and in the distinctly prominent white rings of the marginal spots beneath. Cape Colony.

**C. ortygia** Trim. (73 f) is beneath very similar to *C. methymna*, but with more distinctly prominent *ortygia* markings and black marginal spots in all the areas; the discal spot 5 of the hindwing sometimes does not reach to the median spot. — ♂. Wings above bright blue, forewing with a narrow black marginal band; hindwing with small marginal spots in all the areas. — ♀. Forewing above from the base to the discal spots, which are above distinctly visible, of a bright violettish blue, at the costal and distal margins broadly brown. Hindwing above bluish, at the costal margin as far as vein 6 brown, at the margin with large, black marginal spots in 1 c to 6. Cape Colony to Transvaal.

**C. grahami** Trim. (73 e). ♂. Wings above light violettish-blue with a fine dark marginal line; hindwing *grahami* only in 2 with a black marginal spot. — ♀. Wings above blackish-brown; forewing with a large median spot, and from the base to somewhat beyond the centre violettish-blue; hindwing only at the base with some bluish scales, in area 2 with a black marginal spot bordered with yellow. Cape Colony and Natal.

**C. reichenowi** Dew. (73 c). The colouring and marking of this species not being at hand is to be seen *reichenowi* from the figure. Angola.

**C. pampolis** Druce is very similar to *reichenowi* and it may be identical with it. According to the *pampolis* figures, however, it differs in both wings-beneath exhibiting before the margin two distinct rows of black streaks or spots (submarginal and marginal spots), instead of but one in *reichenowi*. North Rhodesia.

**C. asteris** God. (= *cafrariae* Trim.) (73 f as *trimeni*) has been described above in the review of *asteris* the species. The dark submarginal spots of the hindwing are proximally broad and obtuse. Cape Colony to Natal.

**C. trimeni** B.-Baker (= *asteris* Trim.) is closely allied to *asteris* and was regarded by TRIMEN as *trimeni* the real *asteris* God. The submarginal spots of the hindwing beneath are proximally long-pointed, triangular or coniform. In both the species the ♀♀ are above brown and as far as beyond the centre covered with blue. Cape Colony.

I append here the following species which is unknown to Xc. The author compares it with *C. reichenowi*, but according to the description the species probably belongs to my division II of this group.

*butha*. **C. buthia** *Strand* is described as follows: „The most closely allied to *C. reichenowi* *Dew.*, but distinguished by the following. Size larger (expanse of wings 30 mm), the blue colouring above seems to be somewhat intenser, and the markings of the underside do not show through or only scarcely; the black discocellular spot of the forewing forms a very narrow transverse crescent; both wings with a black marginal band of 1½ mm width, in the eyespot of the hindwing the black pupil is larger, but the orange border is narrower and only present on the inner side. On both wings beneath the ground-colour is more greyish, the dark markings are smaller and less distinctly marked; the discocellular spot of the forewing forms a narrow, curved transverse stripe; the postmedian transverse band is composed of six small, roundish, partly not contiguous spots, and at the margin there are close to each other two almost equally broad black marginal bands, the interior of which is formed by somewhat crescentiform spots; on the hindwing beneath there are, in the same arrangement as in *reichenowi*, five jet-black spots which, however, are much smaller, and the two at the proximal margin are besides more remote from each other, whilst that in the cell is not elongate; the discocellular spot is separate and shaped like in the forewing, and at some distance from it there is a postmedian transverse band formed by six small, roundish, separate blackish spots, similar to that of the forewing and feebly S-curved. At the margin, like in the forewing, two dark bands being situate close together (beside the dark marginal line) and, like above, with a large eyespot inside bordered with reddish-yellow and at the exterior edge dusted in a bright pale blue.“ Gold Coast.

The following very numerous species have nearly all the same marking beneath (see above on p. 475, 476) and can only be distinguished by often recurring very insignificant marks, the stability of which is still rather unknown. In describing the species I have therefore merely stated those marks different from the normal marking or having not yet been mentioned in the review of the species. Regarding the order of the species I have followed rather exactly BETHUNE-BAKERS monography.

*dollmani*. **C. dollmani** *B.-Bak.* (74 e). ♂. Wings above bluish-green with a dark marginal band of about 4 mm width and a dark costal-marginal band of the forewing reaching to the discal cell. All the discal spots beneath are rounded and almost black. Hindwing beneath with a minute black marginal dot in 1 b and 1 c close at vein 1 b. ♀ unknown. Rhodesia.

*intermedius*. **C. intermedius** *B.-Bak.* (74 b). ♂. Wings above light brown with a violet reflection and the markings showing through from beneath. Hindwing beneath recalling that of *C. asteris* and *trimeni* by the large and elongate, almost black discal spots 4 and 5. ♀. Hindwing above with two postmedian transverse rows of white spots. Portuguese East Africa.

*pteron*. **C. pteron** *B.-Bak.* is unknown to me. In the ♂ the wings above are light greyish-violet with a dark median spot of the forewing and a fine marginal band on both wings. Under surface light grey with hardly darker discal spots. Kavirondo. *One (2) in 2.11.1914*

*letsea*. **C. letsea** *Trim.* (= *fumosus* *Butl.*) (73 k). Wings above in both sexes uni-coloured brown with a black, proximally yellow edged marginal spot in area 2 of the hindwing, in the ♀ also in 1 c a yellow spot. Under surface brownish-grey with normal marking; a black marginal dot in area 1 c close at vein 1 b. Cape Colony, Rhodesia, Somali Land.

*lerothodi*. **C. lerothodi** *Trim.* Wings above uni-coloured dark brown without any spots. Under surface somewhat lighter greyish-brown with almost black, white-ringed discal spots and indistinct marginal spots without distinct yellow bordering. Basuto Land.

*skotios*. **C. skotios** *Druce*. Wings above uni-coloured dark brown without markings. Under surface scarcely lighter than the upper, with slightly darker discal spots with whitish-grey rings, and a distinct black marginal spot in 2 bordered with orange. North-West Rhodesia.

*cinereus*. **C. cinereus** *B.-Bak.* ♂. Wings above light brownish-grey with a black marginal spot in area 2 of the hindwing. Under surface with normal markings, but the marginal spot in 2 indistinctly bordered with yellow. North-West Rhodesia.

*jefferyi*. **C. jefferyi** *Swiestra*. This species having been described already in 1909 is not mentioned by BETHUNE-BAKER, but as SWIESTRA himself presumes it must be closely allied to the preceding four species. According to the description, the wings above are olive-brown with an intense violet reflection and dark-brown margins; forewing everywhere with a violet reflection, and with a dark transverse streak at the end of the discal cell; hindwing with a black spot in area 2, at the apex and proximal margin brown; no fine tail; fringes of the wings brown, distally whitish; marking beneath normal, the discal spots slightly darker than the ground-colour. The author continues: most closely allied to *C. skotios* *Druce*, but above distinguished by the violet reflection of the upper surface and the white fringes, and beneath by the grey (instead of olive-brown ground-colour with less distinct markings as well as by the scarcely noticeable white, sagittiform spots on the interior side of the submarginal bows of the hindwing, which are distinct in *C. skotios*. Size about 38 mm.



**C. plebejus** *Bltr.* (74 a). Hindwing tailed, beneath with a subbasal dot in 1 c and a small marginal dot covered with green scales and proximally bordered with yellow in area 1 c, close at vein 1 b. — ♂. Wings above uni-coloured pale greyish-brown, with markings showing through from beneath; hindwing with an eyespot in area 2. — ♀. Wings above blue; forewing with a broad brown costal-marginal and distal-marginal band and a large median spot; hindwing with a transverse streak at the end of the discal cell, two transverse rows of whitish postmedian spots, and often also with distinct dark discal spots in 3 to 5; the marginal spot 2 is large and distinct. Natal, Transvaal, Mashona Land, Rhodesia.

**C. parsimon** *F.* (= *abyssiniensis Strand*, *loveni Auriv.*, *kivuensis Joic. & Talbot*) (73 g, h). Hindwing not tailed, beneath with a subbasal dot in area 1 c. — ♂. Wings above uni-coloured brown without markings showing through from beneath; marginal spot 2 of hindwing feebly developed. — ♀. Wings above brown, from the base to beyond the centre whitish with violettish-blue scales; forewing with a large median spot and brown submarginal band, which is separated by light spots from the likewise dark marginal band. Sierra Leone to Angola, Rhodesia, Victoria-Nyanza, and Uganda.

**C. victoriae** *Karsch* (= *acholi B.-Bak.*) (73 g). Hindwing not tailed and without a subbasal dot in area 1 c. — ♂. Wings above uni-coloured dark brown without markings showing through from beneath, with an eyespot in area 2 of the hindwing. — ♀. Wings above whitish with blue scales, at the base blackish; forewing at the costal margin narrowly, at the distal margin broadly darkened; hindwing with dark, light-edged marginal spots and the usual eyespot in area 2. Particularly distinguished by the distinct black discal spots which also often occur on the forewing above. British East Africa, Uganda.

**C. quassi** *Karsch* (= *phasma Butl.*) (73 i). Hindwing tailed, beneath without a subbasal dot and black marginal dots in area 1 c. — ♂. Wings above dull violettish-blue with a black marginal band of 1 to 2 mm width; hindwing with an eyespot in area 2. — ♀. Wings above brown, in the basal part violettish-blue, behind the centre broadly whitish; forewing with a large median spot, with or without discal spots and with a row of submarginal dots; hindwing above with a transverse streak at the cell-end, two or several discal spots and large marginal spots, of which that in 2 is bordered with yellow. Ashanti; Lagos. Larva on a *Liabata*. The pupa rests in the nest of an ant *Camponotus mandatus*.

**C. synchrematizus** *B.-Bak.* (74 d). Hindwing not tailed and without a subbasal dot in area 1 c. — ♂. Wings above dull violettish-blue; forewing with a median spot; hindwing generally with a black marginal spot in 2. — ♀. Wings above brown at the base, but in the forewing scaled blue as far as beyond the centre; hindwing with large marginal spots, that in 2 being proximally bordered with yellow. Sierra Leone.

**C. solwezii** *B.-Bak.* (74 c) only differs from *synchrematizus* in the marks stated in the review. — ♂. Forewing with an indistinct median spot, hindwing with a distinct eyespot in 2. North-West Rhodesia and on Lake Tanganyika.

**C. glaucus** *Trim.* (74 d) differs from all the other species in the lustrous pale silvery blue upper surface of both wings in the ♂. Both wings above with fine black veins in the marginal part and with a narrow black marginal line; forewing with a fine transverse streak at the end of the cell; hindwing in area 2 with a black marginal spot generally bordered with yellow. The ♀ is similar to the ♀♀ of the allied species; wings above at the base as far as beyond the centre of a pale lustrous blue, with a brown costal-margin and marginal band, and only on the forewing with a median spot. Transvaal, Matabele and Mashona Land.

**C. chloauges** *B.-Bak.* in every detail exactly corresponds with *C. glaucus* (74 d) and only differs in the silvery blue or blue colour of the upper surface being in both sexes replaced by a metallic, yellowish-green colour. Rhodesia.

**C. polydialectus** *B.-Bak.* (74 d). Hindwing tailless and without a subbasal dot in area 1 c, on both sides with an eyespot in area 2 and beneath with a small black marginal dot covered with green scales and bordered with yellow in 1 c close at vein 1 b. Under surface with a very light, whitish-grey ground-colour. — ♂. Wings above light violettish-blue with a fine black marginal line and fine transverse streaks at the cell-end. — ♀. Wings above like in the allied ♀♀ at the costal and distal margins broadly brown, otherwise whitish, intensely scaled violettish-blue. East Africa: Kadugli, Ullal, Kibwezi.

**C. aethiopia** *B.-Bak.* (74 e). Hindwing tailed at vein 2, beneath in area 1 c without a subbasal spot but with a black marginal dot close at vein 1 b. — ♂. Wings above pale bluish-violet; forewing with a black median spot and a broad dark marginal band; hindwing, as otherwise only in the ♀♀, above with large dark marginal spots surrounded with a light colour in 1 c to 6, the spots in 1 c and 2 being proximally bordered with yellow. The ♀ only differs from the ♂ in both wings being very broadly brown at the costal and distal margins. Natal and Portuguese East Africa.

**C. nyasae** *B.-Bak.* (74 e) is only known in the female and could therefore not be ranged in the review of the species. Hindwing tailed at vein 2, beneath in area 1 c with a subbasal spot and black marginal dot at vein 1 b. Ground-colour beneath whitish. Forewing above scaled violettish-blue, at the costal margin



as far as the cell and vein 6 blackish-brown, at the distal margin with a dark band of about 3 mm width enclosing dark marginal spots and a submarginal line which is proximally bordered with white; hindwing as far as the centre or somewhat beyond it dusted with blue, then with large white, almost triangular spots bordering on the submarginal line formed of bows, and between this line and the margin with large black marginal spots surrounded with white, of which that in 2 is proximally thickly bordered with yellow and that in 1 c is streak-shaped. Forewing with a large, thick median spot, hindwing with a narrow one. Both wings above at least with traces of black discal spots. Nyassa Land.

*patricius*. **C. patricius** Trim. (73 i). Hindwing tailed at vein 2, beneath without a subbasal dot in area 1 c, on both sides with an eyespot in area 2. Under surface light brownish-grey with a normal marking. — ♂. Wings above pale bluish-violet with a fine black marginal line and only in the forewing with a black median spot. — I don't know how the ♀ differs from the ♀♀ of the most closely allied species. South and East Africa from Cape Colony to Abyssinia.

*carsoni*. **C. carsoni** Btlr. (74 c). Hindwing tailed, beneath in area 1 c without a subbasal dot, but with two small black marginal dots which are proximally accompanied by a large, yellow transverse spot which is also above distinct. — ♂. Wings above violettish-blue with a narrow dark marginal band; forewing with a median spot, hindwing without it. — ♀ unknown. Very closely allied to *C. patricius* (73 i). East Africa: Fwambo.

*negus*. **C. negus** Feld. (73 g) was described according to a ♀ from Bogos in Abyssinia. According to BETHUNE-BAKER, this species belongs to those exhibiting in the ♂♂ a marking above similar to that in the ♀♀. Whether this is correct, cannot be decided for the present, as the sexes were not met with together. Hindwing without a fine tail and beneath without a subbasal dot in 1 c, on both sides with an eyespot in 2 and beneath with a whitish-grey ground-colour and normal marking. — ♂. Both wings above as far as the submarginal band violettish-blue with a dark transverse streak at the end of the cell, the costal margin being brown as far as the cell and vein 6, and with a broad dark marginal band, a distinct submarginal band, and dark marginal spots proximally bordered with white. — ♀. Wings above marked as in the ♂, but blue only a little beyond the centre, creating thereby a broad light brown zone between the blue basal part and the blackish submarginal line. Abyssinia: Bogos. British East Africa: Nairobi. — **wau** Wichgr. is said to differ in the very distinct markings and the sharp contrast between the ground-colour and the markings. The description otherwise fits rather well the ♂ figured by BETHUNE-BAKER; the discal spot 2 of the forewing, however, is said to be situate just as near to the margin as that in 1 b. Eastern Sudan: Wau.

*neonegus*. **C. neonegus** B.-Bak. (74 c). Hindwing tailed at vein 2 and with a subbasal dot in area 1 c, beneath distinguished by the prolonged, angular, dark brown discal spots 2 to 6; marginal spot 2 on both sides distinct and bordered with yellow. — ♂. Wings above with a reflection varying from light blue to violet, at the margin narrowly black; forewing with a median spot, hindwing without it. — ♀. Wings above brown, like in other species covered with blue scales from the base to beyond the centre; hindwing postmedially with a whitish ground-colour. British East Africa: Nairobi.

*variegatus*. **C. variegatus** B.-Bak. (74 c, d) forms a transition to the following species which are smaller on an average. Hindwing tailed at vein 2, beneath in area 1 c without a subbasal dot and probably also without black marginal dots (this is deducible neither from the description nor the figure). — ♂. Wings above violettish-blue with a narrow dark marginal band and a transverse streak at the end of the cell, at the margin of the hindwing there are round, blackish, not light-ringed marginal spots, of which that in area 2 is proximally bordered with yellowish. Ground-colour beneath whitish-grey, marking normal. — ♀. Wings above brown, at the base and posteriorly scaled blue, behind the centre whitish; forewing with dark discal spots. Nairobi District in British East Africa.

*nevillei*. **C. nevillei** B.-Bak. (74 e) differs from all the other species of this group in the subbasal dots of the hindwing being entirely absent or in the ♀ of a minute size. Hindwing not tailed and without black marginal dots in area 1 c; eyespot in 2 present on both sides. — ♂. Wings above greyish-violet, with a slight leaden lustre, and a dark transverse streak at the cell-end. — ♀. Forewing at the costal and distal margins broadly brown. South Rhodesia.

*naidina*. **C. naidina** Btlr. is in the ♂ above pale bluish silvery grey with a thin black marginal line. Hindwing tailed at vein 2, beneath without a subbasal dot in area 1 c. Under surface stone-coloured grey with dark, white-ringed spots; median spot and discal spots of forewing almost black, discal spot in 1 b is nearer to the margin than those in 2 to 6 which form a feebly bent row. Hindwing with subbasal dots in 1 a, 7 and the cell; its discal spots in 1 b and 7 as usual black and punctiform, the median spot and the rounded discal spots 1 c to 6 tan-coloured; submarginal line brown proximally bordered with large, white spots; blackish marginal spots encircled with white in all the areas (those in 1 c and 2, according to the description, proximally bordered with yellow, but in the figure without this border). Somali Land.

*procerus*. **C. procerus** Trim. (73 h). Hindwing not tailed, beneath in 1 c without a subbasal dot and without black marginal dots. Wings beneath ashy-grey with normal marking, the discal spots slightly darker than



the ground-colour; forewing with 5 discal spots, that in 4 being longish and slanting; the proximal yellow bordering of the marginal spot 2 of the hindwing is indistinct or absent. — ♂. Wings above dull violettish-blue, at the costal and distal margins broadly brown; forewing with a median spot, hindwing without it. — In the ♀ the blue colour is paler, still more reduced, and the median spot of the forewing larger. Natal; Transvaal.

**C. barkeri** Trim. (73.k). Hindwing tailed, beneath in area 1c without a subbasal dot, but close at *barkeri*. vein 1b with a small, black marginal dot covered with metallic scales and towards the base bordered with yellow; subbasal dot in 1a absent or only marked; ground-colour beneath light grey. — ♂. Wings above of a delicate violet with an indistinctly defined dark marginal band and with a fine white submarginal line in 1c to 3; eyespot in 2 large and distinct. — The ♀ differs above in the violettish-blue colour being reduced and leaving space for a broad brown costal-marginal band; in addition the white spots bordering on the submarginal lines and the white rings of the marginal spots (on the hindwing) are visible also above. Sierra Leone, Congo, Angola, Natal to German East Africa, Rhodesia, Ruwenzori.

**C. dolorosus** Trim. (73.f). Hindwing not tailed, beneath in area 1c without a subbasal dot, but with *dolorosus*. a black, metallic scaled marginal dot close at vein 1b. Under surface brown with slightly darker spots. — ♂. Wings above dark dull violet, at the distal margin narrowly brown, without median spots; hindwing at the distal margin with black marginal spots distally bordered by a fine white line. — ♀. Forewing above at the costal and distal margins very broadly brown. Natal; Transvaal, District of Tanganyika.

**C. subpallidus** B.-Bak. (74.c) is very closely allied to *dolorosus* and seems to be chiefly only distinguished *subpallidus*. by the lighter under surface with darker discal spots. — ♂. Wings above light violet; forewing both at the distal margin and costal margin broadly brown; hindwing with a fine dark marginal line and traces of marginal spots in 3 to 6; marginal spot 2 black. — ♀. Wings above brown with bright violettish-blue scales at the base and in the centre. British East Africa and Rhodesia. — **major** B.-Bak. only differs in its larger *major*. size (34 to 36 mm) and deeper violet colour of the upper surface. Nairobi, Laitokitok, Ribwezi, Rhodesia.

**C. mauensis** B.-Bak. as well as *subpallidus* are unknown to me; it is said to differ only in the darker *mauensis*. ground-colour beneath and the narrower dark margins above in the ♂. Hindwing on both sides with a yellow border of the marginal spot in 2. British East Africa: Mau.

**C. albistriatus** Capr. Frons white, above with two rows of black bristles. Hindwing not tailed, beneath *albistriatus*. in area 1c without a subbasal dot and without a black marginal dot (which is sometimes marked by some metallic scales), but with a yellow transverse stripe near the margin; under surface whitish-grey with normal marking, except the yellow border of the marginal spot 2 being very broad and being extended into the areas 1c and 3. — ♂. Wings above light blue; forewing with a broad, distinctly defined dark marginal band; hindwing with traces of marginal spots also in 3 to 6 and in 1c to 3 with a fine, white submarginal line. ♀ unknown to me. Sierra Leone, Congo District, Uganda.

**C. latrunculatus** Grünb. is unknown to me and is described as follows: „♂. Upper surface dull bluish-*latruncula-* violet with a bronze tint. Forewing with a distinct, blackish discocellular spot and a blackish marginal band of *tus*. 1½ to 2 mm width. Marginal band of hindwing somewhat narrower, costal margin of hindwing likewise darker; the black marginal spot in area 2 is distally very narrowly edged with a bluish white, proximally more broadly with orange. Under surface silvery grey with a brownish tint, the discal spots, discal bands and marginal bands somewhat darker than the ground-colour and distinctly edged with white. Discal spots irregularly arranged, since in both wings the spot in area 2 is somewhat proximally removed. In the hindwing 4 distinct, white-edged basal spots, one each in the areas 1a, 1b, 7, and in the cell; the same is the case with the discal spot in area 7. Marginal spot in area 2 jet-black, distally edged with some pale blue scales, proximally broadly bordered with orange; the brown marginal spots of the areas 1c and 3 are likewise proximally bordered with yellow. Hindwing not tailed. Expanse of wings: 29 mm.“ Cameroon: Yaunde District. The species, in GRÜNBERG'S opinion, is closely allied to *C. albistriatus* Capr. and seems only to differ in the subbasal dot in area 1c of the hindwing.

**C. katangae** B.-Bak. is very closely allied to *latrunculatus* and only differs in the area 1c of the *katangae*. hindwing exhibiting also above a large yellow spot at the margin and in the dull violet colour of the ♂ wing above. In the ♀ two thirds of the wings above are whitish with a blue reflection. Southern Congo District: Kambowe.

**C. nandensis** Neave. Frons black with white lateral margins. Eyes hairy. Hindwing not tailed, beneath *nandensis*. in area 1c without a subbasal dot and without black marginal dots, but with a reddish-yellow submarginal transverse spot. Under surface dark brown with distinctly prominent white markings and slightly darker discal spots. — ♂. Wings above blackish-brown; forewing only at the posterior margin of the discal cell and in the basal part of the areas 1a to 4 feebly scaled violettish-blue; hindwing in the areas 1c to 5 as far as the broad marginal band and in 6 at the base scaled violettish-blue; the marginal spots are indistinctly bordered by bluish scales and, at least in 2 and 3, towards the base surrounded with a yellowish red. ♀ unknown. British East Africa.



- kabrosae*. **C. kabrosae** B.-Bak. (74 f). Hindwing not tailed, beneath without a subbasal dot in 1 c. ♂♀. Both wings above brown without any other markings but a broad orange marginal band of the hindwing, with a black marginal dot in 2. Under surface with a brown ground-colour and the normal marking of this group; forewing with 5 rounded discal spots. British East Africa: Kabros, Njoro.
- malathana*. **C. malathana** Boisd. (73 f). This well-known and widely distributed species differs from all the species already mentioned of this group in the discal spot in 1 b of the hindwing not being black and punctiform as in all the others, but pale and shaped like the discal spots 1 c to 6. Hindwing not tailed, beneath in area 1 c with a subbasal spot and at the margin generally with a distinct black marginal dot near vein 1 b; marginal spot 2 on both sides distinct with a broad yellow border; eyes densely haired; frons white, above with two rows of blackish grey bristles. — ♂. Wings above grey with a faint bluish-grey lustre and a fine black marginal line; forewing with a thin transverse streak at the end of the discal cell, hindwing without such a streak, but generally with a postmedian transverse row of triangular whitish spots in the areas 2 to 5, and with indistinct whitish bows within the marginal spots of the areas 3 to 5. The ♀ is above browner with a blue reflection in the centre of the forewing. Everywhere on the Continent and in South Arabia, as well as in the Islands of Madagascar, Aldabra, and São Thomé. — *nilotica* Auriv. differs in the light, softly greyish-blue or silvery grey colouring of the upper surface and in the paler under surface. Probably a dry season form. On the River Nile near Kaka.
- osiris*. **C. osiris** Hpffr. (= *anubis* Snell., *phoa* Snell, *pyrrhops* Mab., *E. Sharpe*) (73 h). Hindwing tailed at vein 2, beneath in area 1 c without a subbasal dot, but with a large, black marginal dot bordered with red, in the centre of the area, and in area 1 b with a pale, transverse, not punctiform discal spot. Under surface with a whitish-grey ground-colour and slightly darker, mostly streak-shaped discal spots. Wings above reddish violet with a fine black marginal line and black marginal spots bordered with red in 1 c and 2 of the hindwing. — ♀. Wings above brown, forewing in the centre, hindwing at the base with violettish-blue scales; hindwing, like in *malathana*, with two submarginal transverse rows of white spots or bows, otherwise and beneath like *brunneus*. Everywhere on the Continent. Madagascar and Annobon. — **brunneus** B.-Bak. only differs in the ♂ wings being brown above with a slight red hue. British East Africa: Nairobi.
- cyclopterus*. **C. cyclopterus** Butl. (74 e, f). Hindwing tailed at vein 2, beneath in area 1 c without a subbasal dot, but with a dark marginal dot in the centre of the area. Under surface light grey with normal marking; discal spots of forewing small, punctiform and nearing the submarginal row; discal spot 1 b of hindwing black, punctiform. — ♂. Wings above light violetish-blue with a broad, posteriorly widening dark marginal band and a dark transverse streak in the centre of the forewing. — ♀ unknown. Sierra Leone, Nigeria, Abyssinia.
- The two following species are distinguished from those described by the indistinct discal and marginal spots of the hindwing beneath and form a transition to the forms of the sixteenth group. Frons white with two rows of black bristles. The yellow proximal border of the marginal spot in area 2 of the hindwing is absent or feebly developed and beneath smaller than above. Hindwing not tailed and lacking the subbasal dot in area 1 c.
- hypopolia*. **C. hypopolia** Trim. (74 f). Eyes hairy. Vein 11 of forewing quite straight. Wings beneath dark grey, more or less (particularly hindwing) clothed with rough whitish scales, the rings of the discal spots light grey instead of white, the same is the case with the other light border-spots or border-lines, only the proximal border-spots of the submarginal lines are sometimes (particularly in the ♀) lighter, whitish; forewing with 5 discal spots in 2 to 6, arranged in a slight bow; hindwing with 3 subbasal dots (in 1 a, 7, and the cell) and 8 discal spots being normally arranged; those in 1 b and 7 small, black and punctiform, the others larger though rather indistinct; marginal spots in the ♂ very indistinct, in the ♀ bordered by light rings, entirely of the ground-colour except the spot in 2, which is jet-black, inwardly pointed and narrowly bordered with yellow, distally showing some greenish scales. — ♂. Wings above dull violetish-blue with a dark, indistinctly defined marginal band, only the forewing with a transverse streak at the end of the cell; hindwing in area 2 with a black marginal spot narrowly bordered with yellow. The ♀ differs above in the broader (about 3 mm) brown costal-marginal and distal-marginal bands of both wings, more blue reflection at the base and in the centre, a thick median spot of the forewing and distinct marginal spots in all the areas of the hindwing; beneath the ground-colour is lighter and all the markings thereby much more distinct. Natal, Transvaal, Mashona Land.
- abyssinicus*. **C. abyssinicus** Auriv. Eyes bare. Vein 11 of forewing very feebly curved. Forewing beneath with a brown transverse spot at the end of the discal cell and 6 large, jet-black, quite round discal spots forming a strong bow; submarginal line coherent, brown, bordered with white; marginal spots less distinctly oblong. Hindwing beneath grey but roughly clothed with large oblong white scales; subbasal dots as usual three (in 1 a, 7, and the cell) small and black; median spot pale, crescentiform; discal spots 8 normally arranged, only that in 7 jet-black, the others pale brown, small (almost punctiform) and separate; their light rings but indistinctly contrast with the whitish ground; marginal spots oblong, greyish-brown, only that in 2 jet-black, with some metallic scales, but without the proximal yellow border; a minute black dot at the anal angle in 1 b. — ♂. Wings above violetish-blue with an intense reflection and a sharply defined dark marginal band of about 3 mm width,



but without a dark costal-marginal band of the forewing. Hindwing with distinct, brown (in area 2 black) marginal spots; the marginal spot in area 2 is proximally indistinctly bordered with a dull yellow. ♀ unknown. Abyssinia.

I append to this group the following species unknown to me, the position of which is uncertain.

**C. antoto** *Strand* (74 f). „Hindwing tailed and beneath with the following markings: in the basal area *antoto*, a row very feebly bent convex towards the margin of 3 jet-black subbasal dots \*), the anterior of which is situate directly behind vein 8 and is broader than long, the central dot in the cell, whilst the posterior is situate on the hind-margin; the dark grey discocellular spot appears as a narrow transverse streak very feebly bent distally convex between the veins 4 and 6, and in front of it somewhat more distally there are two jet-black spots forming a transverse row, the anterior of which is larger, and broader than long; behind the discocellular spot there is at first a round spot of a dark grey colour, which may be considered to belong to the following band, then right in front of the hind-margin a jet-black spot; from the round spot behind the discocellular extending to vein 6, almost directed on the apex of the forewing and distally bent convex, a row of 3 dark grey spots, the two anterior of which are much larger and transverse, and behind the spot in area 2 there is a transverse spot, and another one in area 7, which may be considered as the continuation of the band in the areas 3 to 5. In the marginal area there are two rows of dark grey sublimbal spots and a dark grey marginal line; in area 2 there is a jet-black, transversely oviform spot, proximally adjoined by a larger orange crescent. Expanse of wings: 20, length of wings: 10½ mm. Abyssinia: Antotos.“ ♂.

As the upper and under surfaces of the forewing are not described either the one way or the other, I am unable to determine the position of this small species.

**C. elicola** *Strand* (74 f). The description says: ♂. „Allied to *C. barkeri* *Trim.*, but in area 1 e of the *elicola*, hindwing there is a black punctiform spot; one of the three black punctiform spots of the basal area forming a straight row situate at the hind-margin, is distant from the discal band by scarcely more than its longest diameter and just as large as the two other spots of the same row; the two posterior, coherent spots of the discal row are situate behind the discocellular spot, whereas in *barkeri* they are distinctly more removed towards the margin; the discal band is more distinctly remote from the sublimbal band, and between both there are sharply marked, wedge-shaped spots of a pure white colour; in area 3 likewise an ocellus, though much smaller and more indistinct than that in area 2, and in area 1 e there are traces of two ocelli. Forewing beneath chiefly distinguished from that of *C. barkeri* by all the markings being more distinctly marked and the discocellular spot being nearer to the discal band (from the latter only distant by its greatest radius), the two posterior spots of it are therefore, like in the hindwing, situate behind the discocellular spot. The basal half of the underside of the fringes in both wings jet-black. Both wings above with a bright pale blue lustre, forewing with a narrow, black, streak-shaped discocellular spot and a jet-black marginal band of 1½ mm width; hindwing with the same marginal band exhibiting markings similar to those in *barkeri*, but the ocelli still smaller, only that in area 2 shows proximally a minute orange spot. Expanse of wings: 25, length of wings 13 to 14 mm.“ Abyssinia: Eli.

The author does not mention whether the hindwing is tailed or not. As he compares it with *C. barkeri*, it might be possible that it is tailed. The description, however, otherwise fits rather well the smaller species allied to *C. subpallidus* from which, on the other hand, *C. elicola* differs in the subbasal dot in area 1 e.

**C. masai** *B.-Bak.* was described as *Everes* and is not mentioned in BETHUNE-BAKER'S monography *masai*, of *Neochrysops* and *Euchrysops*; but according to the colour and marking it seems to be closely allied to the species of this group.

„♂. Both wings violettish-blue. Forewing at the costal and distal margins very narrowly black. Hindwing at the costal margin broader brown, at the distal margin narrowly black, with a very fine tail being white at the apex, and before the tail a small dark spot. Fringes greyish-white, distally darker. Underside whitish-grey. Forewing with a small, black median dot encircled with white; a discal row of six separate black spots encircled with white, and traces of a very small one at the costal margin; the four anterior spots form a distal bow, the second (counting from the costal margin) is the nearest to the distal margin, the fifth much more towards the base, and the sixth a little more distally; a double submarginal row of lunae bordered with white; a fine black marginal line. Hindwing with two black subbasal dots, one in the cell and one in area 7, and a small dot at the hind-margin; above the pale brown dot at the cell-end there is a black dot at the costal margin (discal spot 7) and behind it a similar dot at the hind-margin (= discal spot 1 b); the discal row is besides composed of six pale brown spots (arranged as usual); an irregular pale brown submarginal band is distally bordered by a row of pale brown marginal spots; a fine black marginal line; in area 2 a jet-black spot with some metallic blue scales and proximally bordered by an orange bow. All the spots and bands are bordered with white. — ♀. Forewing greyish-brown with a small, bright violettish-

\*) This word is absent in the original description.

blue area at the base and in the centre. Hindwing almost as far as the marginal spots blue; the latter are proximally bordered by a blue bow; the marginal spot in 2 is proximally bordered with orange. Expanse of wings: 27 to 28 mm." British East Africa: Kikuyu.

### Sixteenth Group.

#### The *Niobe*-group.

The species of this group are allied to those of the preceding, but distinguished by the purely black, often small and punctiform discal spots 1 c to 6 of the hindwing, all of which are separated or only partly united. Marginal spot 2 of hindwing above and generally also beneath without any proximal yellow border. Vein 11 invariably separate and straight. Hindwing without a subbasal dot in area 1 e.

Male scales (androconia) present.

#### Review of the Species.

A. Hindwing not tailed, ground-colour beneath varying from grey to blackish. Discal spot 2 of hindwing near to the base of area 2 and almost right behind the median transverse streak.

α. Wings above in both sexes more or less extensively violet or violettish-blue.

\*. Forewing above without a transverse spot at the end of the discal cell. Submarginal line beneath in both wings broad, dark brown, band-shaped, proximally bordered with whitish spots.

1. Discal spots 1 b to 6 of hindwing small, punctiform; some are sometimes indistinct. Marginal spots of hindwing very indistinct, that in 2 sometimes black, but small and not bordered with yellow.

a. Wings beneath with a dark brownish-grey ground-colour with a distinct whitish transverse band between the discal spots and the submarginal band (= the spots proximally bordering on the submarginal band). *C. niobe*.

b. Wings beneath as far as the submarginal band light grey or in the hindwing whitish, whereby the rings of the discal dots and the spots bordering on the submarginal band but feebly contrast with the ground-colour. Eyes bare. *C. lacrimosus*.

2. Discal spots 1 b to 6 of hindwing of normal size and those of the forewing very large. Ground-colour beneath very dark, with distinct white markings. *C. ariadne*.

\*\*. Forewing above with a dark transverse streak at the end of the discal cell. Submarginal line beneath fine, formed of streaks or bows, with small and indistinct proximal spots bordering on it. Marginal spots very small, punctiform, or absent. Eyes hairy. *C. tantalus*.

β. Wings above uni-coloured dark brown without markings.

\*. The white spots bordering on the submarginal line in both wings narrow, fine, arcuate. Eyes hairy. *C. ignotus*.

\*\*. The white spots proximally bordering on the submarginal line are in both wings very large, reaching to the discal spots and forming a broad white transverse band distinctly contrasting with the brownish-grey ground-colour. *C. pephredo*.

B. Hindwing at vein 2 tailed, beneath with a white ground-colour and purely black spots without a light ring or marginal spots. Hindwing without a subbasal dot in 1 c. Marginal spots of hindwing on both sides black, roundish or streak-shaped, those in 1 c and 2 beneath covered with metallic scales and besides towards the base narrowly bordered with yellow. *C. leucon*.

*niobe*. **C. niobe** Trim. Under surface particularly at the distal margin dark brown. — ♂. Wings above dull violet without spots, at the margin broadly darkened. — ♀. Wings above brown, at the base and in the centre scaled violet. Cape Colony near Knysna.

*lacrimosus*. **C. lacrimosus** B.-Bak. (74 d) only differs from *niobe* in the ground-colour beneath being much lighter, particularly on the hindwing, where the surface is more or less densely clothed with large white scales. Natal, Zulu Land, Transvaal. — **major** B.-Bak. is larger (44 mm), above of a darker and purer violet, and beneath still lighter. Natal.

*ariadne*. **C. ariadne** Btlr. The spots bordering on the submarginal band in both wings form a distinctly projecting white transverse band entirely filling up the space between the discal spots and the marginal band. — ♂. Wings above violettish-blue with a dark marginal band, but without median spots. — ♀. Wings above brown, at the base covered with dull violet scales; hindwing with a postmedian transverse row of bluish spots. Natal,



**C. tantalus** *Trim.* (74 f) has a light whitish-grey under surface with minute subbasal dots of the *tantalus*. hindwing; discal spots black and somewhat angular; submarginal line fine with small or indistinct spots proximally bordering on it; marginal dots very indistinct or absent, those in 1 c and 2 sometimes black. — ♂. Wings above of a delicate violet with a fine dark marginal line and in the forewing with a transverse streak at the end of the cell. — ♀. Wings above brown, from the base to beyond the centre blue; median spot of forewing thicker. Caffraria and Natal.

**C. ignotus** *Trim.* (74 f). Under surface grey with black spots bordered with white, and fine white *ignotus*. bows bordering on the submarginal and marginal spots; subbasal dots of hindwing minute; discal spots of both wings small, punctiform and separate. Natal, Transvaal.

**C. pephredo** *Trim.* Under surface brownish-grey; subbasal dots of hindwing minute or absent; median *pephredo*. spots surrounded with white; discal spots 1 c to 6 of hindwing rounded, blackish, separate; marginal spots dull brown, rounded. Natal.

**C. leucon** *Mab.* differs to such an extent from the preceding species that it may be best considered *leucon*. as the representative of a special group. But as I was unable to examine the species myself, I range it for the present in this group. Forewing beneath with a black median spot, five discal spots, of which those in 2 and 3 are separate and rounded, whilst those in 4 to 6 are united into a slanting transverse streak, and with separate black submarginal and marginal streaks in 1 b to 6. Hindwing with three large subbasal dots (in 1 a, 7 and the cell), a large median spot, and 8 unequally sized discal spots in 1 b to 7, of which those of the areas 1 c, 4 and 5 are nearer to the margin than the others. — ♂. Wings above of a beautiful lustrous blue; forewing at the costal margin narrowly, at the apex broadly, and at the distal margin more narrowly black, with a fine black transverse streak at the end of the cell; hindwing with a fine black marginal line and black marginal streaks in all the areas. — ♀. Wings above white; forewing at the costal margin as far as the discal cell and at the apex very broadly black, then with a marginal band very quickly tapering off towards the anal angle; a fine black streak at the end of the cell. Hindwing above at the costal margin as far as vein 6 black, at the margin with black marginal spots and a fine black marginal line. Madagascar.

### Seventeenth Group.

A well distinguished group. Frons in the centre black with white margins. Eyes densely haired. Hindwing tailed at the end of vein 2, beneath with 4 subbasal spots in 1 a, 1 c, 7 and the cell, of which, however, only that in 7 is black with a (blue centre and) white ring; the others are large and entirely shaped like the discal spots. Median spots of both wings of the ground-colour edged with white. All the discal spots except that of area 7 of the hindwing of the ground-colour with a thick white ring; discal spot 7 of hindwing entirely as the subbasal dot of the same area jet-black with a (blue centre and) white ring. Submarginal bows moderately broad, proximally bordered with white spots. Marginal spots of forewing, and 1 c, 3 to 6 of hindwing strigiform of the ground-colour; marginal spot in 2 large, rounded, black, proximally bordered with hemochrome. At the anal angle in the apex of area 1 b a black streak.

**C. scintilla** *Mab.* (= *quadrioecularis* *Saalm.*) (73 i). Under surface with a grey ground-colour; the *scintilla*. subbasal spots in 1 a, 1 b and the cell, the median spots and the discal spots (except that in 7 of the hindwing) of the ground-colour, but with a whitish centre. — ♂. Wings above of a beautiful pale sky-blue colour, at the margin of the hindwing with a slight greenish hue, with a very fine black marginal line and a jet-black marginal dot in area 2 of the hindwing. Fringes of the area 1 b of the forewing and hindwing at least between the veins 7 and 5 of a pure white. — ♀. Forewing above blue, at the costal margin to the cell and then to vein 5 black, and with a dark marginal band of about 3 mm width. Hindwing above blue, at the costal margin as far as vein 6 blackish and before the margin in the areas 1 c to 5 with small black marginal streaks. Madagascar.

**C. sanguigutta** *Mab.* (= *caeruleoarcuata* *Saalm.*) (73 k) is very closely allied to *scintilla* and chiefly *sanguigutta*. only differs in its smaller size and the spots beneath not being centred in white. In addition, the colour above is more violet. Madagascar.

### Eighteenth Group.

Eyes bare. Vein 11 of forewing bent up towards vein 12 and touching it. Hindwing not tailed, beneath with three black basal dots (in 1 a, 7 and the cell); discal spots 1 c to 6 grey, arranged in an almost straight transverse row far behind the apex of the discal cell; hindwing with but one black marginal spot (in 2). Under surface grey with white-edged spots.

### Review of the Species.

- A. Hindwing above only in area 2 with a small yellow submarginal spot or without any yellow markings. Forewing above without any reddish-yellow, lustrous coppery scaling. *C. messapus*.



B. Hindwing above before the margin with a larger reddish-yellow spot in 1 e, 2 and 3. — ♂. Forewing above more or less covered with lustrous coppery, reddish-yellow scales.

*C. mahallakoaena*.

*C. nandianus*.

*C. koaena*.

*messapus*.

**C. messapus** *God.* (73 k). Under surface grey; median spot and discal spots of forewing black and distinct; hindwing with black basal dots in 1 a, 7 and the cell, and black discal dots in 1 b and 7; discal spots 1 e to 6 pale and often very indistinct; the black marginal spot in area 2 towards the base bordered with a small reddish-yellow spot, the other marginal spots indistinct, margined with whitish. — ♂. Wings above almost to the margin dark bluish violet without median spots, but with a black marginal dot (bordered with yellow) in area 2. — ♀. Wings above uni-coloured brown, otherwise as in the ♂. Cape Colony, Caffraria, Abyssinia.

*sebagadis*. — ab. **sebagadis** *Guér.* Hindwing beneath with a reddish-yellow spot also in area 1 e. Abyssinia.

*mahallakoaena*.

**C. mahallakoaena** *Wallengr.* (73 i) is beneath marked almost exactly as *messapus*, but somewhat lighter and with a more distinct marking, distinguished by the marginal spots in 2 and 3 being both proximally bordered by thick orange-red bows. — ♂. Wings above dark violet; forewing and sometimes also hindwing at the base and in the centre covered with yellowish-red scales exhibiting a coppery lustre; this colouring often radiately extends on the veins towards the margin. — ♀. Wings above uni-coloured brown, only in the areas 1 e, 2 and 3 of the hindwing with a reddish-yellow marginal spot. Owambo Land to Cape Colony and then to British East Africa. — ab. **tresignatus** *Strd.* STRAND places this form to *C. messapus*. But if on the one hand the difference in the extent of the reddish-yellow colour on the hindwing above is not forcibly enough marked and on the other hand the lustrous coppery dusting above in the ♂ of *mahallakoaena* may be absent, I do not understand how the two species can be kept apart. STRAND states the following marks of *tresignatus*: „Size as in *messapus*, 22 mm“ (I have a ♂ of *mahallakoaena* at hand with an expanse of 20 mm); „the upper surface coloured as in *messapus* except that the hindwing is spotted orange in 3 cells. The under surface differs from that of *messapus* in its lighter ground-colour and the presence of a similar orange marginal colouring as on the upper surface, which, however, owing to the lighter surroundings, does not appear so distinctly spot-shaped, but rather like a zigzag-like broken transverse band which also extends yet a little into the cell 4 and comprises a small black punctiform spot in the cell 2.“ Abyssinia.

*nandianus*.

**C. nandianus** *B.-Bak.* was described as a *Catochrysops* and is unknown to me. The description says: „Both wings light violettish-blue with a narrow black margin; forewing with traces of the lustrous coppery dusting by which *C. mahallakoaena* is so well distinguished; in *nandianus*, however, there are but faint traces of the copper colour visible and in much flown specimens even these traces disappear altogether; hindwing between the veins 1 a and 2 \*) with a black marginal spot which is proximally bordered by a small red spot. Under surface similar to that of *mahallakoaena*, but with a very light ground-colour and somewhat larger spots which are more broadly edged with white. Expanse of wings: 26 mm.“ Nandi. According to the description, this form also seems to be a transition between *messapus* and *mahallakoaena*.

*koaena*.

**C. koaena** *Strd.* (74 g) was described from a single ♀ and, according to STRAND, it is allied to *C. mahallakoaena*. This affinity is exhibited by the marking beneath, but not by the marking above which is quite different from the ♀♀ of the other species of this group. The description says: ♀. „Upper surface light blue with black veins and a broad black distal-marginal and costal-marginal band; in the forewing the former is 3 mm broad and everywhere equally broad . . .; the costal-marginal band is at the base narrower than the distal-marginal band, but towards the distal margin slightly expanded, and at the apex of the wing its width is about 5 mm; discocellular spot jet-black, rounded off, at least as broad (2 mm) as it is long, for the greatest part situate in the dark costal-marginal band.“ „Hindwing with a costal-marginal and distal-marginal band of about 3 mm width; the latter, however, is for its greater part removed by the markings enclosed therein; in the areas 1 b (ought to be: 1 e. *Auriv.*), 2 and 3 one orange crescentiform spot each which is longer than broad in the areas 2 and 3; in area 2 this spot encloses a jet-black circular spot.“ „Under surface ashy-grey.“ „Forewing with black spots bordered with a pure white.“ Hindwing in the basal area with a straight transverse row of 3 jet-black spots in white rings, being about equally distant from one another“ . . .; „the marginal area behind vein 4 with an orange-red spot being 6 mm broad, anteriorly 3 mm long, and enclosing in area 2 a small, jet-black eyespot which is distally and on both sides narrowly edged with blue, in the neighbouring areas but few blue scales are to be noticed.“ Expanse of wings: 27 to 28 mm. German East Africa: Neuwied-Ukerewe. It may be the ♀ of *C. alberta* *Bltr.* (1901)?

## Nineteenth Group.

### *Chilades*-group.

Eyes bare. Frons narrow, upwards somewhat tapering off. Vein 11 of forewing separate, but for some distance extending close along vein 12. Hindwing not tailed, beneath in area 1 e with a black basal dot and

\*) This statement must be due to a clerical error.



at the margin in the centre with a large, jet-black marginal spot with metallic scales and being inwards bordered with yellowish-red. The discal spots of the forewing and 1 b and 7 of the hindwing as well as the 4 subbasal dots are jet-black and punctiform. The discal spots 1 c to 6 of the hindwing are of the ground-colour. All the spots beneath are margined with white. Black marginal spots broadly bordered with yellow are also in the areas 2 and 3 of the hindwing.

**C. trochylus** Freyer (74 a and Vol. I, p. 297, plate 77 k). ♂. Wings above brown with a distinct *trochylus*. bluish-grey reflection. — ♀. Wings above blackish-brown without a bluish reflection. South Africa to the north as far as the Damaraland, East Africa as far as Abyssinia and Nubia, Arabia, Sokotra.

**C. alberta** Btlr. was described as a *Chilades*, but it most probably does not belong to this group. *alberta*. „♂. Wings above ash-brown with a bright violet reflection; the margins and veins as well as the discocellular spots and fringes are smoke-brown; hindwing with smoke-brown marginal spots, the penultimate (in area 2) being bordered with blackish and the three last (in 1 c to 3) towards the margin bordered with white; the fringes of the forewing towards the anal angle and those of the hindwing with a white basal line; body normal; under surface almost as in *Euchrysops cyclopterus*, except that the three last (in 1 c to 3) marginal spots of the hindwing are inwards bordered by orange spots; the last spot is short and linear. — The ♀ is larger and bluer than the ♂ with a well defined dark marginal band and discocellular spot of the forewing; the costal margin is in both wings broadly darkened; hindwing above with large orange bows within the three last marginal spots (in 1 c to 3); under surface more whitish than in the ♂ with somewhat smaller and more indistinct markings. Expanse of wings: 27 to 30 mm.“ Equatorial Africa. — The description of the ♀ exactly agrees with that of *C. koena* Strd. (1911).

### Twentieth Group.

#### *Cupidopsis*-Group.

Palpi beneath smoothly scaled without bristles. Frons dark with white lateral edges. Eyes bare. Veins 8 and 9 of the forewing entirely absent, and vein 11 is separate and straight. Discal spots separate and punctiform, jet-black or ochreous-yellow. Hindwing beneath with three black subbasal dots (in 1 a, 7 and the cell), in 1 c without a subbasal dot but with two separate discal dots (being a very important and certainly phylogenetically old mark), and with two dark but not black marginal spots which are often united into a transverse streak. Only the marginal spot in 2 is on both surfaces jet-black. The areas 1 c to 3 beneath and sometimes also above with an orange, in 1 c sometimes interrupted transverse band within the marginal spots. It is also remarkable that the discal spot in the area 2 of the hindwing is just as far or farther distally placed than the two discal spots of the area 1 c, whereas in all the species of the groups 15 to 19 it is placed more towards the base than the discal spot 1 c.

### Review of the Species.

- A. Hindwing without a little tail. Forewing beneath with a black dot in the discal cell behind its centre. The discal spot 6 of the forewing is much nearer at the base than the discal spot in 5. — *Neolycaena* Karsch.  
*C. cissus*.
- B. Hindwing at the end of vein 2 tailed. Forewing beneath normal without a black dot in the discal cell. The discal spot 6 of the forewing is but little nearer at the base than the discal spot in 5. — *Cupidopsis* Karsch.  
*C. iobates*.

**C. cissus** Godt. (74 g) is a species easily recognized by the marks mentioned above. ♂. Wings above *cissus*. dull bluish violet, forewing at the costal margin narrowly, at the apex and distal margin more broadly dark brown, hindwing at the costal margin as far as vein 7 and at the distal margin as far as vein 6 brown, then with dark marginal spots and a fine dark marginal line; marginal spot 2 with a thick yellow spot on the basal side, sometimes also a small yellow submarginal spot at the anal angle in 1 c and rarely also one in 3; at least in 1 c to 3 a fine white distal border-line of the marginal spots. The ♀ is above at the costal margin on both wings and at the apex and distal margin of the forewing very broadly blackish-brown (at the apex of the forewing almost to the base of area 5 and at the costal margin of the hindwing as far as vein 6); the blue colour is lighter, hardly violet, and it often warms distally into white particularly in the areas 2 and 3 of the forewing and 3 to 5 of the hindwing. Marginal spots of the hindwing like in the ♂, but more distinct. In the whole of West, South, and East Africa, to the north as far as Sierra Leone and Uganda. Madagascar. — ab. **aberrans** *aberrans*. Btlr. is only an aberration in which the discal spots beneath have flown together and are divided or have disappeared, which may occur in nearly all the species of *Cupido*. Madagascar.

**C. iobates** Hopff. (72 k). Subbasal and discal dots on the hindwing in the typical form black. *iobates*. Submarginal band of the hindwing on both sides from the proximal margin at least to vein 4, in the ♀ often



almost to the costal margin filled up with orange. — ♂. Wings above of a delicate violettish blue, at the apex and margin broadly dark brown; the yellow submarginal band of the hindwing particularly above narrower and shorter. — ♀. Wings above with a lighter blue ground-colour; forewing at the costal margin, apex and distal margin broader blackish-brown; hindwing particularly above with a broader and longer orange marginal band. South Africa to Angola and in the whole of East Africa to Uganda and Abyssinia. — ab. *ochreopuncta* *ab. nov.* only differs by the subbasal and discal dots of the hindwing being ochreous. Damaraland, Griqualand, Transvaal, Delagoa Bay. — ab. *conjungens* *Strd.* is allied to *C. cissus* by the forewing beneath showing a small black dot in the discal cell. German East Africa.

### Twenty-first Group.

The species belonging hereto were hitherto placed to the genus *Catochrysops*, but as BETHUNE-BAKER has already stated, they differ from the group of *Catochrysops* (type *C. strabo*). Of the Ethiopian species unfortunately only *C. eleusis* and *contractus* were before me. They are distinguished by the following marks. Eyes bare. Frons white with no or but few black bristles. Vein 11 of the forewing touches vein 12 or it is very close to it. Hindwing at the end of vein 2 tailed, beneath in area 1 c without a subbasal dot, but with two black marginal dots covered with metallic scales. The subbasal dots of the areas 1 a, 7 and of the cell are small or absent. Hindwing above at least in 2 with a distinct black marginal dot. Small species with an expanse of wings of 18 to 27 mm.

### Review of the Species.

A. Hindwing above without a yellow submarginal spot in area 2 or in the ♀ with an indistinct pale yellow submarginal spot.

α. Discal spot in 1 b of the hindwing small, black, and punctiform or entirely absent; if present, much nearer at the base than the spot in 1 c.

*C. eleusis*.

*C. nigeriae*.

*C. lois*.

β. Discal spot in 1 b of the hindwing pale and transverse, slightly nearer at the base than the discal spot 1 c. The discal spots 1 b to 3 of the forewing and 1 c to 5 of the hindwing are elongate, strigiform.

*C. contractus*.

B. Hindwing above in area 2 with an orange submarginal spot within the black marginal spot. Discal spot 1 b of the hindwing pale and transverse, like the discal spot in 1 c.

*C. distractus*.

**C. eleusis** *Demais*. This species is beneath rather variable and occurs at least in two forms; one with strigiform and the others with rounded discal spots in the areas 1 c to 5 of the hindwing. Also the black marginal spots in 1 c to 3 of the hindwing are very variable, sometimes larger, sometimes very small. The ground-colour of the under surface of the hindwing also varies from almost white to light yellowish-brown. As the older authors described the marking beneath only very superficially without comparing it with the normal marking of the species of *Cupido*, it is impossible to ascertain which forms they had in fact before them. *eleusis*. I consider, however, the following form to be the type. — **eleusis** *Demais*. (74 g). Both wings, particularly the hindwing, beneath with a greyish-yellow ground-colour. The discal spots 1 c to 6 of the hindwing rounded off and similar to the ground-colour, those of the forewing sometimes only 5 (in 2 to 6) pale and rounded off, sometimes 6 darker and strigiform; the discal spots 1 c and 2 of the hindwing are not equally distant from the base and not situate in a transverse line vertical to the proximal margin. Marginal spots 1 c and 3 of the hindwing beneath small, punctiform and covered with silvery scales. Fringes broad white with a dark basal line. — ♂. Wings above light of a delicate violettish blue with a fine dark marginal line and a small black marginal dot in area 2, the marginal dots of the other areas being indistinct. — ♀. Wings above dark brown, in and behind the cell dusted with bluish; the marginal spots of the hindwing are larger and more distinct, in white rings, the spot in 2 besides proximally bordered with light yellow; before the marginal spots in the *strigatus*. areas 1 c to 4 a transverse row of white submarginal spots. Senegal, Nubia, Abyssinia. — **strigatus** *form. nov.* ♂. Above quite similar to the ♂ of *eleusis*, but with 4 distinct black marginal spots, two small ones in 1 c, a large one in 2, and a smaller one in 3. Ground-colour beneath almost white with yellowish-brown strigiform markings; black are only the subbasal dots (in 1 a, 7 and the cell), the discal spots 1 b and 7 as well as the marginal spots 1 c to 3 and a minute pointed spot at the anal angle in 1 b of the hindwing; the marginal spots 1 c to 3 are as above, though with some metallic scales; marginal spots 4 to 6 narrow, strigiform, yellowish-brown like all the marginal spots of the forewing; then follows on both wings a yellowish-brown submarginal line, and between the latter and the discal spots an irregular, somewhat dentate, indistinctly defined, pale yellowish-brown transverse line which is removed more towards the base in the areas 1 c and 2 (resp. 1 b and 2) and is evidently the remainder of the original ground-colour. The discal spots 1 c to 6 of the hindwing and 1 b to 6 of the forewing are strigiform and somewhat irregularly arranged, the spots 1 c and 2 of the hindwing and



1 b and 2 of the forewing being situate much nearer at the base than the others; they form an almost straight transverse streak and thus an almost straight continuation of the transverse streak at the end of the discal cell. ♀ unknown. Nubia. Is it perhaps a distinct species?

**C. nigeriae** Em. Sharpe. „Forewing above light azure-blue, the apex and margin with a fine dark line; fringes greyish-white; hindwing like the forewing with a fine brown marginal lines and almost white fringes; before the margin a row of white, dark-pupilled spots, the largest and darkest of which is in area 2, near the anal angle another row of indistinct white spots. Under surface similar to that of *Catochrysops contracta* Btlr. Another row of spots in the marginal parts of both wings shows larger and more prominent spots than in the said species; they consist of four narrow brown lines with white spots on each side between the veins; basal area of the hindwing with the usual three black dots; the large marginal spot in 2 with metallie silvery scales at the anal margin; two dots in 1 c and one in 3 with the same metallie scales.“ Nigeria. The species is unknown to me, but it probably hardly differs from *C. eleusis*.

**C. lois** Btlr. „♂. Dark bronze-brown, the interno-basal surface of the wings broad violettish-blue; hindwing directly before the small tail with a small, black, outside white-edged spot; another short, white line at the end of the interior median area; a black marginal line; fringes partly white. Wings beneath light stone-grey, the markings beneath almost as in *C. pandava* \*) from India; forewing with a light-edged, brown spot at the end of the discal cell; a similarly coloured discal band slantingly extends from the costal margin to the vein 3, then somewhat nearer at the base and divided into two spots; the usual, eye-spot like marginal spots are composed of alternately white and brown bows and spots. Hindwing near the base with a transverse row of three white-ringed black dots, of which that at the costal margin is the largest; a white-edged, small brown discocellular luna; a bent and somewhat eurved discal row of white-ringed spots, the first at the costal margin black, the others somewhat separate from it and brown, the row behind vein 3 almost interrupted; the usual marginal spots are towards the base bordered with broad white bows, the two nearest to the anal angle are black. Body beneath white. Expanse of wings: 25 mm.“ Somaliland. This description is evidently made after a ♀ and not after a ♂ and fits well the females of *C. eleusis* lying before me. If that is indeed the case, the species must be denominated *C. lois*.

**C. sancti-thomae** Em. Sharpe, being confined to the Island of S. Thomé, is likewise unknown to me. The short description runs as follows: allied with *C. ella* Btlr. (= *contractus* Btlr.), but somewhat larger. The ♂ is above more brownish-violet. The under surface is rather different, of a monotonous brown, with darker markings edged with white or light grey; hindwing with three black eyespots bordered with orange and towards the margin sealed metallic green. The ♀ shows a very lustrous metallic blue area of the forewing and a very broad brown band at the costal and distal margins. Hindwing also with a similar basal area which, however, is less lustrous; the costal and distal margins are brown with an indistinct black spot in area 2. Under surface like in the ♂, but a little more indistinctly marked.“

**C. contractus** Btlr. Under surface with a whitish-grey ground-colour and darker grey, white-edged markings. Forewing with 6 discal spots, those in 1 b to 3 being streak-shaped, those in 4 to 6 rounded, those of the areas 1 b and 2 a little more towards the base; submarginal and marginal spots strigiform, rather indistinct; ground-colour between the discal spots and the submarginal line monotonously grey without spots. Hindwing with three minute subbasal dots (in 1 e, 7 and the cell); discal spots 1 b to 6 all dull grey, oblong or strigiform, that in 7, however, jet-black, punctiform; the discal spots 1 c and 2 together form a straight transverse streak situate somewhat within the discal spot 3; the discal spot 1 b is still more remote towards the base; distinct marginal spots in 1 e to 6, but only the two in 1 c and that in 2 are black and metallic sealed, the one in 2 besides inwards with a pale yellow narrow spot bordering on it. Ground-colour between the discal spots and the submarginal band with faint traces of grey spots. — ♂. Wings above entirely as in *C. eleusis* light bluish-violet, with a fine black marginal line and a small black marginal dot in 2 and often also two indistinct ones in 1 c. The ♀ is not known to me from Arabia, but in the East Indies, where the species also occurs \*\*), it is said to be above similar to the ♀ of *eleusis* which is described above. Arabia.

**C. distractus** Joann. ♂. Wings above bluish-violet with a fine black marginal line; hindwing at the margin from the proximal margin to vein 2 with two fine white lines and a black marginal spot in 2 inwards bordered with orange-red. Under surface grey; forewing with a grey, white-edged central spot and 5 black, rounded discal dots in 2 to 6, and a longish discal spot in 1 b; at the margin two rows of dark bows bordered with white. Hindwing with three black subbasal dots (in 1 a, 7 and the cell) and a similar discal dot in 7; the other discal dots are slightly darker than the ground-colour, partly rounded (in 2, 3 and 6), partly longish or strigiform (in 1 b, 1 e, 4 and 5); marginal spots distinct, that in 2 black with blue scales and an orange spot bordering on it, that in 1 e strigiform. Expanse of wings: 22 mm. ♀ unknown. Abyssinia.

\*) Cf. Vol. IX, p. 922, plate 153 k.

\*\*) Cf. Vol. IX, p. 922.



## Twenty-second Group.

Frons black with fine white lateral margins. Eyes bare. Vein 11 of the forewing for some distance united with vein 12 or close at it. Hindwing at the end of vein 2 tailed. Wings beneath with a white ground-colour and oblong or strigiform discal spots at least in 1 b to 3 of the forewing and 1 b to 5 of the hindwing. Hindwing beneath with black subbasal dots in 7 and the cell, and often also in 1 a, in 1 c without a subbasal dot and with a transverse marginal spot. Discal spot 7 punctiform and black. Discal spot in 1 b black, but transverse; the other discal spots are lighter, not purely black. The transverse streaks at the end of the cell in both wings very fine and pale.

## Review of the Species.

- A. The discal spot 6 of the hindwing is absent or it is right behind the spot in 7. The marginal spot 2 of the hindwing at least beneath with a narrow, orange-red spot proximally bordering on it. — ♂. Wings above blackish-brown without any blue, at the apex of the forewing narrow whitish. — ♀. Forewing above only in the centre covered with bluish. *C. hippocrates*.
- B. The discal spot 6 of the hindwing is as usually nearer at the margin than the discal spot 7. The marginal spot 2 is edged with white and covered with metallic scales, but without any reddish-yellow bordering. Wings above with a blue or whitish (♀) ground-colour.
- α. Discal spots on both wings united into a line. Forewing above in the centre blue, at the costal and distal margins very broad blackish-brown. *C. micylus*.
- β. Discal spots on both wings separate. — ♂. Forewing above as far as the costal margin of a delicate violettish blue, with a dark marginal band. — ♀. Wings above with a whitish ground-colour. *C. togara*.

*hippocrates*. **C. hippocrates** *F.* (74 g). Wings beneath greyish-white; discal spots of the forewing black, those in 1 c to 5 of the hindwing grey; submarginal line on both wings as well as the marginal spots of the forewing and 3 to 6 of the hindwing grey; marginal spot 2 of the hindwing rounded, black, that in 1 c strigiform or parted blackish; a small, wedge-shaped black spot at the anal angle in the apex of area 1 b. — ♂. Wings above blackish-brown, with a fine black marginal line and a black marginal dot in 2; forewing at the apex narrow white. — ♀. Forewing above along the centre (and at the anal margin) covered with light bluish; hindwing above at the anal margin and at the base dark brown, then bluish with distinct white-ringed marginal spots. Sierra Leone to Natal and Abyssinia, Madagascar.

*micylus*. **C. micylus** *Cr.* (74 h; ? ♀ as *togara*) is only known to me from CRAMER's figure. The marks mentioned in the review have been taken from the figures. BETHUNE-BAKER reports that *micylus* is a species different from *togara* and that the ♂ has a different genital organ, but he says nothing about the external differences of the two species. Sierra Leone.

*togara*. **C. togara** *Plötz* (74 h; as *micylus*). Wings beneath white or whitish; forewing with strigiform, separate black or grey discal spots, of which those in 1 b and 2 are situate more towards the base. Submarginal and marginal streaks distinct. Hindwing beneath with large, jet-black subbasal dots in the cell and in area 7, sometimes also with a minute similar dot in 1 a; discal spots 1 b and 7 also black, the former transverse, the latter rounded, the discal spots 1 c to 6 lighter grey, that in 1 c much nearer at the submarginal line than the others; submarginal line distinctly prominent, formed of 9 bows (two in 1 c, and one each in 1 b, 2 to 7); marginal spots in 1 c and 2 always black, also the others sometimes blackish. Both wings with a fine black marginal line. — ♂. Wings above light violettish-blue with a black marginal band of about 2 mm width, which is spotless in the forewing, whilst in the hindwing it encloses a complete row of white-edged marginal spots; forewing as far as the costal margin blue, hindwing at the costal margin as far as vein 7 brown, at the proximal margin, however, as far as vein 1 a scaled blue. — ♀. Wings above whitish, at the base as far as the centre grey and feebly scaled bluish; forewing with a dark central spot, and an apical spot of about 5 mm width, from which a much narrower marginal band runs to the anal angle; this marginal band in the areas 1 b to 3 with two whitish streaks each; the discal spots are often also above distinct; hindwing also above with distinct discal spots, and at the margin marked as in the ♂. Cameroon to Congo and Ruwenzori.

## Twenty-third Group.

*Oboronia*-Group.

This group closely approximates the preceding and may be regarded as a branch of it created by the extension of the white colour and the reduction of the marking beneath.

Eyes bare. Frons black with fine white lateral margins. Palpi beneath smoothly scaled without bristles. Forewing with 11 veins; vein 11 separate and usually broadly separated from vein 12, but sometimes very



much nearing it. Both wings above and beneath without a spot or transverse streak at the end of the discal cell. Ground-colour in both sexes beneath and generally also above white. Forewing always above with a black marginal band expanded at the apex; hindwing with a dark apical spot, black marginal spots, and a fine black marginal line; often also with a dark submarginal line.

### Review of the Species.

#### A. Hindwing at vein 2 tailed.

- α. Hindwing beneath with black subbasal dots in the cell and in 7 sometimes also in 1 a, but not in 1 c. Discal spots 1 c to 6 dull, strigiform, that in 7 large and black.

\*. Wings above in the ♂ with a greyish-blue ground-colour.

*C. bibundanus*.

\*\*. Wings above with a white ground-colour.

1. Forewing above at the base with a greyish-blue or bluish spot almost reaching to vein 2 and the centre of the costal margin.

*C. rutshurensis*.

2. Forewing above at the base not or very little darkened.

*C. plurilimbatus*.

#### β. Hindwing beneath without any subbasal dots.

\*. Hindwing beneath with a distinct black discal spot in area 7; the discal spots in 1 c to 6 are dull, strigiform, indistinct or absent, very much nearing the submarginal line. Hindwing on both sides with a distinct, often thick submarginal line proximally bordering on the marginal spots.

1. Forewing above at the costal margin broad blackish-grey, usually as far as the marginal band. Hindwing beneath without a discal spot in 1 b.

*C. punctatus*.

2. Forewing above at the costal margin only at the base a little dusted dark. Hindwing beneath with a black discal dot in area 1 b.

*C. pseudopunctatus*.

\*\*. The discal spot in area 7 of the hindwing is indistinct and pale or entirely absent. The other discal spots are absent or very indistinct.

1. Hindwing on both sides and forewing beneath with a distinct dark brown submarginal line proximally bordering on the marginal spots.

a. Forewing above at the costal margin as far as the centre or as far as the marginal band dusted with blackish-grey.

*C. bueronicus*.

b. Forewing only at the base feebly dusted grey.

*C. albicosta*.

2. Hindwing on both sides and forewing beneath without a submarginal line at all. The marginal spots are therefore quite separate. Forewing above at the costal margin all white, or only slightly darkened close at the base.

*C. güssfeldti*.

#### B. Hindwing without the small tail. — *Athysanota* Karsch. Hindwing beneath without subbasal dots, but with a black discal spot in area 7. The submarginal line on both wings beneath is indistinct or absent. Only the three marginal spots 1 c to 2 on the hindwing beneath are black and distinct.

*C. ornatus*.

As the species have already been dealt with at large above in the characterization of the group and in the review of the species, it suffices to mention their range in the following descriptions.

**C. bibundanus** Grünb., by the ground-colour above forms a good transition to *C. togara* Plötz. ♀ unknown. *bibundanus*, Cameroon: Bibundi.

**C. rutshurensis** Joic. & Talb. was described after some ♀♀. A ♂ from Ruwenzori is before me and only differs above from the ♀ by the veins of the hindwing being black only behind their centre and the discal streaks being more indistinct. The under surface of the ♂, according to the description, entirely agrees with that of the ♀. Rutshuru River. Ruwenzori.

**C. plurilimbatus** Karsch (= *trypherotus* B.-Bak.). BAKER's description of *trypherotus* exactly fits *plurilimbatus* and is certainly the same species. Congo District: Mukenge and Makala. — A questionable ♀ of this species I have mentioned and described in dealing with the *Lycaenidae* of the second German Central African Expedition.

**C. punctatus** Dew. (74 i; under surface as *pseudopunctatus*) is above distinguished by the prominent marginal bands on both wings and the almost invariably complete costal-marginal band of the forewing. LAMBORN discovered the larva in Nigeria and describes its habits at large. It lives in the flower-buds of *Costus afer* (Scitamineae) and is infested and protected by ants. The pupa also rests in the dry flower-buds.

**C. pseudopunctatus** Strd. is unknown to me. The description says: „Very similar to the preceding species (*punctatus*), but distinguished by the costal area of the forewing being in the centre not at all and at

the base only very slightly dusted dark; the marginal band of the hindwing is only about  $1\frac{1}{2}$  mm broad, and only at its anterior end, where it is slightly broader (about 1.8 mm), black, otherwise dark grey; on the hindwing beneath the black costal spot is just as large as the marginal spot; near the centre of the proximal margin of the hindwing there is a black punctiform spot; forewing beneath without a postmedian row of grey dots; the marginal spots of both wings appear as blurred transverse streaks at most. Expanse of wings: 33 mm." Cameroon.

*bueronicus*. **C. bueronicus** Karsch. (74 h; under surface as *güßfeldti*). German East Africa: Usambara. The marks vid. in the review on p. 493.

*albicosta*. **C. albicosta** Gaede is described after a single ♂, as follows: „similar to *punctatus* Dew. and *pseudopunctatus* Strd. Forewing only at the base feebly dusted with dark, at the distal margin somewhat broader black than *pseudopunctatus*, more like *punctatus*. On the hindwing the marginal band is as broad as in *punctatus*, but the white rings in it are only indistinctly pronounced. Beneath on both wings the black eyespots with white rings are more distinct than in *punctatus*. On the hindwing all the marginal spots are black, not only that in area 2, which shows blue scales, like in *punctatus*. The costal margin of the hindwing lacks the spot, and there are only traces noticeable of submarginal yellow lines at the proximal margin and between R 4 and R 6. Expanse of wings: 30 mm." Cameroon.

*güßfeldti*. **C. güßfeldti** Dew. (74 h) is easily recognized by the entirely separate marginal spots on the hindwing. Sierra Leone to Angola.

*ornatus*. **C. ornatus** Mab. (= *pseudosoyauxi* Ehrm.). Forewing above at the base as far as the centre of the costal margin dusted with dark grey. In the typical form the hindwing above lacks the submarginal line, and the marginal spots are therefore only separated by the black ends of the veins. Sierra Leone to Togo. — *vestalis*. **vestalis** Auriv. Hindwing above with a distinct submarginal line being thickened at the veins. Sierra Leone to Congo. — **flava** Holl. Ground-colour of both wings straw-coloured instead of white. Gabun: Benito.

We may append here *C. elorea* F. (Donov.). Anything similar has no more been found later on, and the typical specimen was probably composed of two different species, the forewing of a *Larinopoda* and the hindwing of *C. ornatus*.

## Twenty-fourth Group.

### Zizera-Group.

Eyes bare or rarely finely haired. Frons black with white lateral margins. Palpi beneath very bristly. Forewing with 11 veins, vein 8 being absent. Hindwing tailless. Throughout small species (expanse of wings: 15 to 24 mm), all the discal spots beneath small, black, separate and punctiform (only the discal spot in 1 c is generally transverse, strigiform, which is due to its being composed of two combined dots).

## Review of the Species.

### A. Hindwing beneath with a black subbasal dot in area 1 c.

- α. Vein 11 of the forewing is only for a short distance separate and then entirely fused with vein 12 without being separated again. Forewing without a black dot in the discal cell, but with discal dots in 7 + 8, 9 and 10. Hindwing at the rise of vein 8 with a small black basal spot; its discal dot in 6 much nearer at the margin than that in 7. — *Zizula* Chapm. *C. gaika*.

- β. Vein 11 of the forewing quite separate or only touching vein 12.

\*. Wings above without any spots, or at most with traces of marginal spots on the hindwing.

†. Forewing beneath without a black dot in the discal cell and without discal dots in 7 to 10. — *Zizina* Chapm.

1. The discal spot 6 of the hindwing is not nearer at the margin than the discal spot 7; these two are therefore situate in a line almost vertical to the costal margin. *C. antanossa*.
2. The discal spot 6 of the hindwing is as generally much nearer at the margin than the discal spot 7. *C. minusculus*.

††. Forewing beneath with a black dot or transverse streak in the discal cell. The discal spot in 6 of the hindwing is much nearer at the margin than the spot in 7, the discal spots 5 to 7 are consequently in an almost straight line.

1. Forewing beneath with but three large, jet-black discal dots (in 4 to 6); in case there are other discal spots present, they are minute and indistinct. Hindwing with a basal dot in area 7. *C. atrigemmatus*.
2. Forewing beneath at least with 7 distinct discal dots in 1 b to 6, and 9.
  - a. Hindwing beneath without a white longitudinal streak at vein 5. Forewing without a discal dot in area 10 and generally also without a basal spot in area 1 b. *C. lysimon*.



- b. Hindwing beneath with a white longitudinal streak at vein 5 from the central spot to the submarginal line. Forewing also in area 10 with a discal dot and with a large, rounded basal spot in 1 b.

*C. lucidus*.

*C. drucei*.

- \*\*. Wings above blackish-brown with black central and discal spots being distinctly prominent owing to its thick white rings. Forewing with a large spot in the discal cell and a similar basal spot in area 1 b.

*C. stellatus*.

- B. Hindwing beneath without a subbasal dot in area 1 c. Forewing without a dot in the discal cell.

*C. unigemmatus*.

**C. gaika** Trim. (= *mylica* Guen., *perparva* Saalm.) (74 i). ♂. Wings above light greyish-blue with a dark marginal band being broad in the forewing, narrow in the hindwing. ♀. Wings above dull brown. Ashanti; South and East Africa from Ovambo Land to Somali Land, Abyssinia, and Nubia. Arabia, Madagascar, Mauritius. Bourbon. Seychelles, Admiralty Islands.

**C. antanossa** Mab. (74 i, and Vol. IX, plate 153 e) differs from all the other species of this group, except *stellatus*, by the position of the discal spot 6 of the hindwing. — ♂. Wings above blackish-brown, from the base to beyond the centre dusted with blue, with faint traces of marginal spots. — ♀. Wings above blackish-grey, with some few blue scales in the basal part. Lake Chad, South West Sudan, Ruwenzori, Gabun, Congo, Mashuna Land, Natal, East Africa, Madagascar, Mauritius.

**C. minusculus** Auriv. Of this small species (17 to 18 mm) only the ♀ is known. Wings above uni-coloured blackish-grey without a blue reflection; fringes whitish-grey; under surface with a grey ground-colour. South West Madagascar.

**C. atrigemmatus** Btlr. Forewing beneath without a basal spot in 1 b. ♂. Wings above blue with a fine black marginal line, and a more or less broadly darkened apex of the forewing. Under surface with a dark grey ground-colour. ♀ unknown to me. Madagascar.

**C. lysimon** Hbn. (Vol. I, p. 295, plate 79 c). ♂. Wings above violettish-blue, at the margin broadly darkened. ♀. Wings above blackish-brown, at the base of the forewing more or less dusted with greyish-blue. Common in the whole of Africa. It also occurs in Arabia and in the Island of Sao Thomé, Prince's Island, Comoro Islands, Mauritius, Bourbon, Seychelles, and Sokotra.

**C. lucidus** Trim. (74 i). Hindwing beneath with a black basal spot in area 7 at the base of vein 8. — ♂. Wings above light bluish-violet with a fine black marginal line and besides with an indistinctly defined dark marginal band of the forewing and indistinct marginal spots of the hindwing. Under surface light grey. — ♀. Wings above blackish-brown, only at the base and anal margin dusted with bluish. South Africa from Angola to Cape Colony and from there in East Africa to British East Africa.

**C. drucei** B.-Bak. is unknown to me, but according to the description it must be closely allied with *C. lucidus*. „♂. Wings above smoke-brown, everywhere densely dusted with blue; forewing with a moderately broad, dark marginal band, on the inside of which there are traces of a row of black spots; hindwing similar to the forewing. Both wings beneath coffee-brown with black, white-ringed spots; forewing with two spots of the discal cell, the second being large; a little nearer at the margin than the latter at the costal margin a small dot; then a bent row of 4 discal spots, of which the hindmost is very small; an indistinct submarginal row of dark spots touching the white bordering of the submarginal (it is probably meant to be „marginal“) row. Hindwing at the base with a row of 4 small, but distinct dots, followed by a similar subbasal row of larger dots; a spot at the cell-end; a very much bent row of 7 discal spots; a fine white streak from the central spot to the third and fourth spots of the discal row; the submarginal row and the marginal spots as in the forewing. Expanse of wings: 20 mm.“ ♀ unknown. Madagascar.

**C. stellatus** Trim. (74 i) differs from all the species of *Cupido* known to me by the dark spots beneath, which are provided with thick white rings, occurring also above. The discal spots 6 and 7 of the hindwing are situate as in *antanossa*. — ♂♀. Wings above with a blackish-brown, beneath greyish-brown ground-colour. Cape Colony, Nyassa Land, Kilima-Ndjaru.

**C. unigemmatus** Btlr. is not before me and may not belong to this group. It was described as a species of *Zizera*, but later on (1900) the author says that it belongs to *Chilades* and is allied to *messapus*. This is another proof for the uncertainty of the delimitation of the so-called „genera“ of this group of forms. „♂. Allied to *Z. lysimon*: above smoke-brown with a faint violettish-blue reflection and a fine black marginal line; hindwing in area 2 with a black, light-edged marginal spot proximally feebly bordered with orange; fringes smoke-grey, darker in the forewing, with a blackish subbasal line. Body blackish. Under surface drab, the marking almost as in *Z. lysimon*, but the forewing with a light-edged, reniform central spot; the discal row consists of five white-ringed, black discal spots and two white transverse streaks in 1 b instead of the spot in *Z. lysimon*. Submarginal and marginal spots normal. Hindwing with but three, almost equidistant, black,



white-ringed subbasal dots, and only the discal spot 7 being black; of the marginal spots the sixth (in 2?) is black, at the edge scaled blue. Expanse of wings: 23 mm." Nyassa Land.

The description differs from the figure in which all the discal spots of the hindwing are small, black and punctiform, not only that in 7, and neither of the orange bordering of the marginal spot on the hindwing above nor of the marginal spot itself there are any traces to be discovered.

### Uncertain Groups.

I have not been able to range with certainty the following species according to the description or figures in one of the preceding groups set up by myself.

*kedonga*. **C. kedonga** Gr.-Sm. (= *pulchristriata* B.-Bak.). „♂. Upper surface: forewing bluish-grey with silvery white veins, a narrow dark grey margin. Hindwing light silvery blue, at the margin with a row of rounded black spots all of which are equally large, except the two small ones at the anal angle; the spots are distally finely edged with white; a fine dark grey marginal line; a small, fine black tail. Under surface grey. Forewing with the subbasal and discal spots arranged almost the same as in *Everes fischeri* Ev. (Vol. IX, plate 153 h) and *E. filicanda* Pryer (Vol. IX, plate 153 h). Hindwing with subbasal and discal spots surrounding the cell in almost the same way as in the said species; behind the discal spots follows a broad, irregular, orange transverse band from vein 8 to the proximal margin, and then comes a row of rounded, black, metallic scaled marginal spots in the light grey marginal area; fringes of both wings greyish-white."

The species was described as an *Everes*, but whether it is indeed more closely allied to *E. argiades* Pallas (the type of *Everes* Hbn. Vol. I, plate 78 a), I cannot decide.

The circumstantial and precise description of *Lycaena pulchristriata* by BETHUNE-BAKER (1905), however, so completely agrees with *kedonga*, that I cannot doubt the identity of these two species.

According to the figures and descriptions, the following marks of this species are particularly conspicuous: hindwing at the end of vein 2 tailed; all the discal spots and subbasal dots beneath on both wings jet-black, rounded, and white-ringed. Forewing beneath with two subbasal dots, close behind each other in the cell and in 1 b; the discal spots 1 b and 2 are vertical to the anal margin, somewhat within the other discal spots. The submarginal band and marginal spots are distinct. Hindwing beneath with three subbasal dots (in 1 a, 7 and the cell) and eight discal dots (in 1 b, 1 c, 2 to 7), of which that in 2 is situate close at the posterior angle of the discal cell and those in 5 to 7 as generally in an almost straight line; besides at the costal margin, on the outside of the discal spot 7, but within the red transverse band, a dot quite similar to the discal spots, which is probably to be explained as the marginal spot of area 7. Hindwing on both sides and in both sexes on the outside of the red transverse band with 7 rounded black marginal spots, of which two are small and in area 1 c.

*paludicola*. **C. paludicola** Holl. „Upper surface with a dark grey ground-colour; hindwing with a fine marginal line and towards the anal angle with 6 somewhat triangular, black, blue-edged marginal spots. Under surface lighter than the upper; both wings at the end of the discal cell with a double, white-edged transverse line; then follow on both wings transverse rows of dark, light-edged markings and a submarginal row of similar bows. Hindwing besides with two almost square, dark brown spots at the costal margin, one at the centre, the other near the base, and with a similar though punctiform spot at the proximal margin near the base. Of the marginal spots being distinct above only those in 1 c, 2 and 3 are distinct beneath; of these spots those in 1 c are indistinct, but those in 2 and 3 large and very distinct; all of them are towards the base bordered by red bows and in the centre covered with lustrous green scales. Expanse of wings: 28 mm." French Congo: Ogowe River.

*serrula*. **C. serrula** Mab. „♀. Above blackish-brown with white fringes; hindwing at the anal margin with two rows of white spots which become indistinct towards the costal margin; at the distal margin three black spots, the first at the anal angle composed of two combined dots, the next is very large, the third small and somewhat indistinct, hereafter traces of two others; the proximal white transverse band is almost broken up into spots, but it extends more forward than the distal one and almost reaches to the costal angle; it thus borders proximally on the narrow brown transverse line between the two bands. Under surface with a greyish-brown ground-colour; in the forewing there are six, somewhat undulating rows of light brown spots; the two proximal ones form a knee before the proximal margin, the third is almost straight, the fourth is united with the fifth which is submarginal and forms a bow; between these two there is another which, however, does not cross the cell; the marginal row, finally, consists of dots; a thick marginal line is before the fringes. The hindwing shows the same, but somewhat more irregular marking; the submarginal line is very distinct, somewhat undulate, and extends within the marginal spots, of which the first and third, counting from the anal angle, are



represented by black spots, corresponding to those above; they are at their margins decorated with metallic blue scales. Expanse of wings: 20 mm." Senegal. This species must be closely allied or identical with the ♀ of *C. eleusis* Dem.

Three other species described by WALKER in 1870 as *Lampides* ♀♀, probably also belong near to *C. eleusis* and *contractus*. It is not mentioned whether the hindwing has a small tail or not. The size varies between 20 and 25 mm. These species are:

**C. lyce** Walk. ,,♀. Metallic brown, at the margin dark brown; fringes white. Hindwing: a submarginal *lyce*. band of white spots; three jet-black spots at the margin near the anal angle. Under surface white, towards the base grey; seven brown, more or less irregular transverse lines, the seventh being antemarginal and broken up into spots. Hindwing with two jet-black dots at the base and with three jet-black spots at the anal angle, which are decorated with metallic blue scales and proximally bordered with ochreous-yellow." Somali Land: Tajora.

**C. bura** Walk. ,,♀. Metallic brown; marginal line dark brown; fringes white. Under surface light *bura*. brown, with eight hardly undulate white transverse lines, the two innermost of which are interrupted and shortened. Hindwing beneath with a jet-black, white-ringed dot in the centre near the base and with three larger jet-black spots near the anal angle; they are decorated with lustrous blue scales and proximally bordered with ochreous-yellow." Somali Land: Tajora.

**C. pandama** Walk. ,,♀. Metallic brown with a faint blue hue, at the base deep blue, fringes white. *pandama*. Under surface white with different, irregular or incomplete, more or less light brown transverse bands, some of which are edged with dark brown. Hindwing with fewer and more irregular bands, and with two jet-black marginal spots on each side of the small tail; they are decorated with lustrous blue scales." Sudan: Hor-Tamanib.

## 27. Genus: **Heodes** Dalm.

This genus is better known by the name of *Chrysophanus* Hbn. (cf. Vol. I, p. 281; Vol. V, p. 812, and Vol. IX, p. 931), but it must be named *Heodes*, because this name is surely older.

Eyes bare. Frons moderately broad with yellow or grey bristles and a very fine or indistinct white lateral line. Antennae moderately long, little projecting beyond the centre of the forewing or hardly reaching to it. Forewing only with 11 veins, vein 8 being absent; vein 11 runs separately; the upper discocellular vein is absent, and the veins 6 and 7 + 9 therefore start from the same place.

In the marking the species of *Heodes* differ from those of the genus *Cupido* by the discal cell of the forewing beneath showing two large black dots following one after the other in a straight line with the central spot; the distal one of these dots usually also occurs above; besides the forewing has on both sides an interrupted transverse row of 5 to 7 discal spots and beneath generally also some dark submarginal streaks; the marginal spots, however, are entirely absent or only feebly marked beneath at the apex. The hindwing, like in the species of *Cupido*, shows 3 subbasal dots, a transverse streak at the end of the discal cell, black discal spots in 1 b to 7, a bent row of black submarginal dots distally remote from the margin, and similar marginal spots united with the marginal line; all these spots, however, are generally, particularly beneath, for the greatest part indistinct or quite extinct.

The genus chiefly only occurs in the palaearctic and nearctic regions, but with some few forms it also penetrates into the Ethiopian region. Of these forms two are scarcely more than geographical races of the palaearctic *H. phlaeas* L., whereas the third is a quite distinct species peculiar of South Africa.

## Review of the Species.

A. Margin of the hindwing between the veins 1 b and 2 somewhat emarginated and at the anal angle distinctly angular.

α. Hindwing above black with a broad red marginal band between the anal angle and vein 6.

*H. phlaeas* v. *pseudophlaeas*.

β. Hindwing above lustrous copper-red with distinct black discal, submarginal and marginal spots, only at the proximal margin broad and at the costal margin narrow black.

*H. abboti*.

B. Margin of the hindwing uniformly rounded off, not angular at the anal angle.

*H. orus*.

*H. phlaeas* L. var. **pseudophlaeas** Lucas (= *menelicki* Thierry-Mieg) is very similar to the well-known European *H. phlaeas* (Vol. I, plate 77 b) and only differs by the somewhat lighter ground-colour of the forewing above and the brownish yellow hindwing beneath. Besides the dark marginal band on the forewing beneath is not grey and distinct, but yellowish, and at the apex it warms into the ground-colour: only



*ethiopica*. towards the anal margin it is a little dusted with light grey. Abyssinia. — **ethiopica** *Poulton* is very much like *pseudophlaeas*, but, as usually also the palearctic forms, it shows within the red marginal band of the hindwing above small, pale dots which are absent in *pseudophlaeas*. In South West Uganda, and in the district between Tanganyika and Ruwenzori.

*abboti*. **H. abboti** *Holl.* (74 i). Wings above with a lustrous, copper red ground-colour. Forewing with a black marginal band of about 2 mm width, a black dot in the discal cell, a thick central spot and 6 discal spots which are arranged in three groups (a transverse spot in 1 b, two spots somewhat more towards the margin in 2 and 3, and three dots in a bow in 4 to 6). Forewing beneath as above, but without a marginal band and with another basal dot in the cell and with black submarginal streaks at least in 1 b to 3. Hindwing beneath with a reddish ground-colour on which the spots are indistinctly visible. ♀ larger with distinct spots. In the mountainous districts of Nyassa Land as far as British East Africa.

*orus*. **H. orus** *Cr.* (74 i). Wings narrower and longer than in the preceding species and at the margin much more rounded off. Frons and palpi with whitish or light grey scales. Wings above yellowish-red with a coppery lustre, with a black, at the apex somewhat broader marginal band, which in the hindwing is produced by the marginal spots being united, and has therefore inward an undulate edge; forewing above with a central spot and discal spots and sometimes also with a small dot in the discal cell; hindwing above generally with a transverse streak at the end of the cell and with some small discal spots (particularly in 2, 4, 5, 6 and 7); the spot in 6 is situate right behind the spot in 7, if both are present. Forewing beneath almost as above, but with 2 dots in the discal cell, at the costal and distal margin bordered with grey, with dark submarginal streaks in 1 a to 6. Hindwing beneath grey, a little spotted brown, with very indistinct markings; only the submarginal streaks are somewhat more distinct. ♀ larger with more distinct and completely present discal spots above. Cape Colony to Natal and Transvaal; also near Kikuyu in British East Africa.

## Alphabetical List

with reference to the original descriptions of the forms of the Ethiopian *Lycaenidae*.

\*) signifies that the form is also figured at the place cited.

- abboti* Heud. *Holl.* Entomologist 25, Suppl., p. 90.  
*aberrans* Cup. *Bthr.* Ann. Mag. Nat. Hist. (5) 2, p. 288.  
*abraxas* Pent. *Dbl.* & *Hew.* Gen. Diurn. Lep. Taf. 77. \*  
*abrupta* Lyc. *Gaede* Int. Ent. Zeitschr. 9, p. 72.  
*abyssiniens* Cup. *Aur.* Voyage Maur. Rotsch. Lep. p. 367. \*  
*acares* Deud. *Karsch* Berl. Ent. Ztschr. 38, p. 219.  
*aeraea* *Telipna* *Dbl.* & *Hew.* Gen. Diurn. Lep. (1852). Taf. 77. \*  
*aeraeina* Eriks. *Trim.* Proc. Zool. Soc. Lond. 1891, p. 92. \*  
*acracoides* *Telip.* *Sm.* & *Ky.* Rhop. Ex. 13, Lyc. Afr. p. 39. \*  
*actinofina* *Telipna* *Lathy* Trans. Ent. Soc. Lond. 1903, p. 194. \*  
*adamsi* Iol. *Lathy* Trans. Ent. Soc. Lond. 1903, p. 199. \*  
*adelgitha* Microp. *Hew.* Ent. Month. Mag. 11, p. 36.  
*adelgunda* Microp. *Stgr.* Iris 4 (1891) p. 219.  
*aderna* Spind. *Plötz* Stett. Ztg. 41 (1880) p. 203.  
*adolphi-friderici* Epit. *Schuttze* Iris 25 (1911) p. 95.  
*aelianus* Iol. *Stgr.* Iris 4 (1891) p. 148.  
*aemulus* Iol. *Trim.* Trans. Ent. Soc. Lond. 1895, p. 192. \*  
*aethiopia* Cup. *B.-Bak.* Trans. Ent. Soc. Lond. 1922, p. 131. \*  
*aethiops* Cup. *Mab.* Bull. Soc. Zool. Fr. 2 (1877), p. 219.  
*aethon* Phas. *Trim.* South-Afric. Butt. 2, p. 176. \*  
*aethria* Iol. *Karsch.* Berl. Ent. Ztschr. 38, p. 220.  
*aequatorialis* Cup. *E. Sh.* Proc. Zool. Soc. Lond. 1891, p. 637. \*  
*afra* Lyc. *B.-Bak.* Trans. Ent. Soc. Lond. 1910, p. 27. \*  
*agnes* Iol. *Aur.* Entomol. Tidskr. 18, p. 219.  
*agrippina* *Pseudal.* *H. Drc.* Ent. Month. Mag. 24, p. 259.  
*alba* Pent. *Dew.* Deutsche Ent. Ztschr. 30, p. 428. \*  
*albata* Oxyl. *Aur.* Entomol. Nachr. 21, p. 382.  
*alberta* Cup. *Bthr.* Ann. Mag. Nat. Hist. 1901, p. 291.  
*alberta* Lyc. *B.-Bak.* Trans. Ent. Soc. Lond. 1910, p. 28. \*  
*alberta* Microp. *Stgr.* Iris 4 (1891) p. 220.  
*albicans* Lipt. *Cat.* Ann. Mag. Nat. Hist. 1904, 13, p. 76.  
*albicans* Lyc. *Grünb.* Sitz.-Ber. Naturf. Fr. 1910, p. 153.  
*albicosta* Cup. *Gaede* Int. Ent. Zeitschr. 9 (1915), p. 112.  
*albistriatus* Cup. *Capr.* Ann. Soc. Ent. Belg. Bull. 33 p. 121.  
*albofasciata* *Telipna* *Aur.* Ann. Mus. Genov. 4, p. 520.  
*albomaculata* *Crud.* *Aur.* Seitz, Macrolep. 13, p. 432.  
*albomaculata* Epit. *B.-Bak.* Ann. Mag. N. H. 1903, 12, p. 329.  
*albomaculatus* Iol. *E.-Sh.* Entomologist 1904, p. 204.  
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*alienus* Iol. *Trim.* Trans. Ent. Soc. Lond. 1898, p. 10. \*  
*aliquantum* Lipt. *H. Drc.* Proc. Zool. Soc. Lond. 1910, p. 369. \*  
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*almeida* Phas. *Fldr.* Verh. Zool. Bot. Ges. Wien 12, p. 478.  
*alphaeus* Cap. *Cr.* Papil. Exot. 2, p. 131. \*  
*amakosa* Durb. *Trim.* Trans. Ent. Soc. Lond. (3) 1, p. 401.  
*amanga* Axioc. *Ww.* Oates Matabele-Land, p. 351.  
*amanica* Lyc. *Strd.* Entomol. Zeitschr. Stuttg. 23, p. 125.  
*amarah* Lyc. *Guér.* Lefèvre Voy. Abyss. 6, p. 384. \*  
*amasa* Oxyl. *Hew.* Ill. Diurn. Lep. Suppl. p. 4. \*  
*amazoula* *Alaena* *Bsd.* Voy. Deleg. 2, p. 591.  
*amenaida* Pent. *Hew.* Exot. Butterfl. \*  
*amenaidana* Pent. *Strd.* Archiv f. Naturg. A. 77 : 1, p. 193.  
*amenaidoides* Pent. *Holl.* Entomol. News 1892, p. 23.  
*amine* Zer. *Bthr.* Trans. Ent. Soc. Lond. 1874, p. 533. \*  
*anadema* Lyc. *H. Drc.* Trans. Ent. Soc. Lond. 1905, p. 258. \*  
*angelita* Deud. *Suff.* Iris 17 (1904), p. 54.  
*angulosus* Megal. *Grünb.* S.-B. Ges. Naturf. Berl. 1910, p. 478.  
*antalus* Deud. *Hpfgr.* Mon.-Ber. Akad. Wiss. Berl. 1855, p. 641.  
*antanossa* Cup. *Mab.* Ann. Soc. Ent. Fr. 1877 Bull. p. 72.  
*antifannus* Hypol. *Dbl.* & *Hew.* Gen. Diurn. Lep. Tab. 75. \*  
*antimachus* *Pseudal.* *Stgr.* Exot. Tagf. 1, p. 276. \*  
*antinorii* Cup. *Oberth.* Anal. Mus. Genov. 18, p. 731. \*  
*antoto* Cup. *Strd.* Entom. Rundschau 28, p. 138.  
*apelles* Spind. *Oberth.* Etud. d'Ent. 3, p. 22.  
*aphnacoides* Iol. *Trim.* Trans. Ent. Soc. Lond. 1873, p. 110.  
*apicalis* Mimaer. *Sm.* & *Ky.* Rhopal. Exot. 13, Lyc. Afric. p. 41. \*  
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*argenteola* Aphn. *Holl.* Psyche 5, p. 430.  
*argenteomaculata* Axioc. *Pag.* Jahrb. Nass. Ver. Nat. 55, p. 154.  
*argyraspis* Phas. *Trim.* Trans. Ent. Soc. Lond. 1873, p. 114. \*  
*argyrocyclus* Aphn. *Holl.* Psyche 5, p. 431.  
*ariadne* Cup. *Bthr.* Proc. Zool. Soc. Lond. 1898, p. 193. \*



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 bibundanus Cup. *Grünb. S.-B. Ges. Nat. Fr. Berl.* 1910, p. 479.  
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*paucipunctata* Pent. *Ky.* Ann. Mag. Nat. Hist. (6) 6, p. 263.  
*pauli* Pent. *Stgr.* Exot. Tagf. 1, p. 267.  
*pauperula* Lyc. *Strd.* Ent. Zeitschr. Stuttg. 23, p. 126.  
*peculiaris* Cup. *Rogh.* Baumanns Usambara, p. 331.  
*pephredo* Cup. *Trim.* South-Afric. Butt. 3, p. 389.  
*perdita* Irid. *Ky.* Ann. Mag. Nat. Hist. (6) 6, p. 274.  
*perfragilis* Pent. *Hott.* Psyche 5, p. 427.  
*perigrapha* Deud. *Karsch* Entom. Nachr. 21, p. 313.  
*peringueyi* Phas. *Aur.* Seitz, Macrolep. 13, p. 430.  
*perion* Axioe. *Cr.* Papil. Exot. 4, p. 176. \*  
*perobseura* Lipt. *H. Drc.* Proc. Zool. Soc. Lond. 1910, p. 362. \*  
*petreia* Pent. *Hew.* Ann. Mag. Nat. Hist. (4) 13, p. 382.  
*peucetia* Pent. *Hew.* Exot. Butt. Pent. & Lipt. 1. \*  
*phaeoehiton* Pseuder. *Grünb.* S.-B. Ges. Nat. Berl. 1910, p. 476.  
*phanes* Spind. *Trim.* Trans. Ent. Soc. Lond. 1873, p. 111. \*  
*phidia* Pent. *Hew.* Ann. Mag. Nat. Hist. (4) 13, p. 383.  
*phidias* Leptom. *F.* Entom. Systemat. 3 (1) p. 286.  
*philippus* Hypol. *F.* Entom. System. 3 (1), p. 283.  
*phoeniceis* Lyc. *Karsch* Berl. Ent. Ztschr. 38; p. 228.  
*phosphor* Phas. *Trim.* Trans. Ent. Soc. Lond. (3) 2, p. 178.  
*piaggiae* Iol. *Oberth.* Ann. Mus. Genov. 18, p. 730.  
*picata* Alaena *E.-Sh.* Ann. Mag. Nat. Hist. (6) 17, p. 125.  
*picena* Pent. *Hew.* Ann. Mag. Nat. Hist. (4) 13, p. 382.  
*pieta* Pseuder. *Sm.* Novit. Zoolog. 5, p. 356.  
*pierus* Phas. *Cr.* Papil. Exot. 3, p. 84. \*  
*pilos* Spalgis *Ham.-Drc.* Ann. Mag. Nat. Hist. (6) 5, p. 27.  
*pinodes* Epit. *H. Drc.* Ann. Mag. Nat. Hist. (6) 5, p. 24.  
*pinodoides* Epit. *Sm.* Rhop. Exot. 23 Lyc. Afric. p. 85. \*  
*plebejus* Cup. *Btlr.* Proc. Zool. Soc. Lond. 1898, p. 192. \*  
*plinius* Cup. *F.* Entomol. System. 3 (1), p. 284.  
*plurilimbatus* Cup. *Karsch* Entomol. Nachr. 21, p. 303.  
*poggei* Cup. *Dew.* Nov. Act. Acad. N. Cur. 41 (2) p. 205. \*  
*polydialeetus* Cup. *B.-Bak.* Trans. Ent. Soc. Lond. 1922, p. 329. \*  
*posthumus* Epit. *F.* Entom. System. 3 (1), p. 149.  
*poultoni* Mimacr. *Neave* Novit. Zoolog. 11, p. 337. \*  
*praestans* Lipt. *Sm.* Rhop. Exot. 29, Lyc. Afric. p. 141. \*  
*preussi* Pent. *Stgr.* Exot. Tagf. 1, p. 267.



princeps Lyc. *Btlr. Ann. Mag. Nat. Hist.* (4) 18, p. 484.  
 procerus Cup. *Trim. Trans. Ent. Soc. Lond.* 1893, p. 125. \*  
 prometheus Iol. *H. Dre. Ann. Mag. Nat. Hist.* (6) 8, p. 149.  
 propinquus Aphn. *Holl. Entomol. News* 4, p. 25. \*  
 protumnus Arrug. *L. Mus. Ulric. Lep.* p. 340.  
 pseudophlaeas Heod. *Luc. Ann. Soc. Ent. Fr.* 1866, p. 499.  
 pseudopunctatus Cup. *Strd. Archiv Naturg.* 78 A. 2, p. 137.  
 pseudozeritis Chlor. *Trim. Tr. Ent. Soc. Lond.* 1873, p. 113. \*  
 pteron Cup. *B.-Bak. Trans. Ent. Soc. Lond.* 1922, p. 312. \*  
 puella Teriom. *Ky. Ann. Mag. Nat. Hist.* (5) 19, p. 365.  
 puellaris Teriom. *Trim. Proc. Zool. Soc. Lond.* 1894, p. 59. \*  
 pulcherrima Zer. *Aur. Seitz, Macrolep.* 13, p. 418. \*  
 pulverulenta Mimacr. *Schultze Entomol. Rundsch.* 29, p. 50.  
 punctata Larin. *H. Dre. Proc. Zool. Soc. Lond.* 1910, p. 361.  
 punctata Phas. *Aur. Seitz, Macrolep.* 13, p. 427.  
 punctatus Cup. *Dew. Nov. Act. Acad. N. Cur.* 41 (2) p. 205. \*  
 puncticilia Cup. *Trim. Trans. Ent. Soc. Lond.* 1883, p. 350.  
 punicea Axioc. *Sm. Ann. Mag. Nat. Hist.* (6) 3, p. 134.  
 purpurascens Asl. *Holt. Psyche* 5, p. 424.  
 pyrocis Phas. *Trim. Trans. Ent. Soc. Lond.* 3 (2), p. 178.  
 pyroptera Lyc. *Aur. Entomol. Nachr.* 21, p. 382.  
 pusio Citr. *Sm. Novit. Zoolog.* 5, p. 355.  
 pythagoras Lyc. *F.-Entom. System.* (3) 1, p. 259.

quadratus Cup. *Grant Nat. Hist. Sokotra*, p. 305. \*  
 quassi Cup. *Karsch Entomol. Nachr.* 21, p. 305.  
 questiauxi Aphn. *Aur. Arkiv. Zoolog.* 1, p. 252. \*

rabefauer Cup. *Mab. Ann. Soc. Ent. Fr.* (5) 7, 1877, p. 71.  
 radiata Lyc. *B.-Bak. Trans. Ent. Soc. Lond.* 1910, p. 55. \*  
 radiata Pent. *Lathy Trans. Ent. Soc. Lond.* 1903, p. 195. \*  
 rava Deud. *Holl. Ann. Mag. Nat. Hist.* (6) 10, p. 286.  
 reginaldi Cup. *Heron Trans. Zool. Soc. Lond.* 19, p. 159. \*  
 reichenowi Cup. *Dew. Nov. Act. Acad. N. Cur.* 41 (2), p. 203. \*  
 renidens Deud. *Mab. Ann. Soc. Ent. Belg.* 28 Bull. p. 186.  
 respiciens Cup. *Btlr. Ann. Mag. Nat. Hist.* (4) 18, p. 484.  
 reticulata Alaena *Btlr. Ann. Mag. Nat. Hist.* (6) 18, p. 160.  
 reutlingerii Lachn. *Holt. Ann. Mag. Nat. Hist.* (6) 10, p. 286.  
 rex Aphn. *Aur. Arkiv. Zoolog.* 5 (Nr. 5), p. 5. \*  
 rezia Epit. *Sm. & Ky. Rhop. Exot.* 23 Lyc. Afr. p. 86. \*  
 rhodesensis Cup. *B.-Bak. Trans. Ent. Soc. Lond.* 1922, p. 302. \*  
 robusta Lyc. *Aur. Entomol. Tidskr.* 16, p. 215.  
 rogersi Telipna *H. Dre. Trans. Ent. Soc. Lond.* 1907, p. 78. \*  
 roidesta Pent. *Suff. Iris* 17, p. 47.  
 rollei Alaena *Suff. Insect.-Börse* 1904, p. 134.  
 rotha Pent. *Hew. Exot. Butterfl.* \*  
 rothi Telipna *Sm. Novit. Zoolog.* 5, p. 353.  
 rougemonti Phas. *Oberth. Etudes Lepidopt. Comp.* 3, p. 93. \*  
 rubricincta Lyc. *Holl. Psyche* 6, p. 51.  
 rubrimaculata Lyc. *Strd. Entomol. Zeitschr. Stuttg.* 23, p. 126.  
 rubropunctus Cup. *Lathy Ann. Mag. Nat. Hist.* 1921, p. 208.  
 rufilla Telipna *Sm. Rhopal. Exot.* 57, Lyc. Afr. p. 133. \*  
 rufomarginata Lyc. *B.-Bak. Trans. Ent. Soc. Lond.* 1910, p. 54. \*  
 rufoplaga Lyc. *B.-Bak. Trans. Ent. Soc. Lond.* 1910, p. 72. \*  
 russulus Pseuder. *H. Dre. Proc. Zool. Soc. Lond.* 1910, Tab. 33. \*  
 rutilo Pseuder. *H. Dre. Proc. Zool. Soc. Lond.* 1910, Tab. 33. \*  
 rutshurensis Cup. *J. & Talb. Bull. Hill.-Mus.* 1, p. 99. \*  
 ruwenzorica Lyc. *Grünb. Erg. Deutsch. C.-Afr. Exped.* 3, p. 543.

saga Durb. *Trim. Trans. Ent. Soc. Lond.* 1883, p. 353.  
 sauctithomae Cup. *E.-Sh. Proc. Zool. Soc. Lond.* 1893, p. 556.  
 sanguigutta Cup. *Mab. Bull. Soc. Philom.* (7) 3, p. 132.  
 sanguinea Lyc. *B.-Bak. Trans. Ent. Soc. Lond.* 1910, p. 41. \*  
 sanguinea Telipna *Plötz Stett. Zeitg.* 1880, p. 198.  
 sapphirinus Iol. *Aur. Entomol. Tidskr.* 18, p. 218.  
 sappirus Iol. *H. Dre. Proc. Zool. Soc. Lond.* 1902 (2), p. 117. \*  
 sardonix Phas. *Trim. Trans. Ent. Soc. Lond.* 1868, p. 83. \*  
 sauberi Lipt. *Schultze Entomol. Rundsch.* 29, p. 92.  
 schubotzi Mimacr. *Schultze Entomol. Rundsch.* 29, p. 50.  
 schultzei Deud. *Aur. Arkiv. Zoolog.* 3, (Nr. 19), p. 2.  
 schultzei Iol. *Aur. Arkiv. Zoolog.* 2, p. 13. \*  
 sciaphilus Iol. *Schultze Archiv f. Naturg.* A. 81 : 7, p. 165.  
 scintilla Cup. *Mab. Ann. Soc. Ent. Fr.* 1877, p. 72.  
 sciutillans Hypol. *Aur. Entomol. Tidskr.* 16 (1895), p. 210.  
 scintillans Iol. *Aur. Arkiv. Zoolog.* 2, p. 13. \*  
 scintillula Lyc. *Holt. Psyche* 6, p. 50.  
 seotios Cup. *Dre. Trans. Ent. Soc. Lond.* 1905, p. 259.  
 sebgadis Cup. *Guér. Lef. Voyage Abyssin.* 6, p. 385. \*  
 semirufa Pseuder. *Sm. Rhopal. Exot.* 59 Lyc. Afr. p. 146. \*  
 semirufa Telipna *Sm. & Ky. Rhopal. Exot.* 10, Lyc. Afr. p. 33. \*  
 septistrigata Lipt. *B.-Bak. Ann. Mag. Nat. Hist.* (7) 12, p. 325.  
 serena Citr. *Ky. Ann. Mag. Nat. Hist.* (6) 6, p. 269.

serrula Cup. *Mab. Ann. Soc. Entom. Fr.* 1890, p. 25.  
 sharpei Myr. *B.-Bak. Ann. Mag. Nat. Hist.* (7) 17 (1906), p. 106.  
 sharpiae Cup. *Btlr. Proc. Zool. Soc. Lond.* 58, p. 929. \*  
 sibella Iol. *H. Dre. Proc. Zool. Soc. Lond.* 1910, p. 372. \*  
 sichela Cup. *Wallgr. Rhopal. Caffr.* p. 37.  
 sidus Iol. *Trim. Trans. Ent. Soc. Lond.* (3) 2, p. 176.  
 sigiensis Pent. *Strd. Societ. Entomol.* 25, p. 6.  
 silanus Iol. *Sm. Ann. Mag. Nat. Hist.* (6) 3, p. 137.  
 silarus Iol. *H. Dre. Ent. Month. Mag.* 22, p. 154.  
 silas Iol. *Ww. Gen. Diurn. Lep.* p. 481. \*  
 silenus Myr. *F. Syst. Ent.* p. 531.  
 similis Citr. *Ky. Ann. Mag. Nat. Hist.* (5) 19, p. 366.  
 similis Hewit. *Aur. Entomol. Tidskr.* 12 (1891), p. 218.  
 similis Lipt. *Ky. Ann. Mag. Nat. Hist.* (6) 6, p. 264.  
 simplex Deud. *Schultze Archiv f. Naturg.* A. 82 : 2, p. 39.  
 simplex Lipt. *Aur. Entomol. Tidskr.* 16 (1895), p. 201.  
 simplex Megal. *Röb. Iris* 1 (1886), p. 51. \*  
 simplex Phas. *Trim. Trans. Ent. Soc. Lond.* 1893, p. 136.  
 simplicia Lipt. *Mschtr. Abh. Senckenb. Ges.* 15 (1888), p. 63. \*  
 skoptoles Mimacr. *Ham. Dre. Trans. Ent. Soc. Lond.* 1907, p. 78. \*  
 snuthi Lyc. *Mab. Bull. Soc. Ent. Fr.* (5) 7, p. 72.  
 soalicus Cup. *Karsch, Entomolog. Nachricht.* 24, p. 369.  
 socotranus Cup. *Grant Bull. Lin.-Mus.* 2 (1899), p. 10.  
 solwezii Cup. *B.-Bak. Trans. Ent. Soc. Lond.* 1922, p. 325. \*  
 somalina Spind. *Btlr. Proc. Zool. Soc. Lond.* 1885, p. 764. \*  
 sorhageui Zer. *Dew. Nov. Act. Ac. Nat. Cur.* 41 (2), p. 204. \*  
 spindasoides Spind. *Aur. Arkiv f. Zool.* 10 : 14, p. 2.  
 spuma Larin. *W. Dre. Proc. Zool. Soc. Lond.* 1910, p. 361.  
 staetalla Cup. *Karsch Entomolog. Nachricht.* 21, p. 302.  
 staudingeri Epit. *Ky. Ann. Mag. Nat. Hist.* (6) 6, p. 271.  
 staudingeri Lyc. *Sm. & Ky. Rhop. Exot.* 27 Lyc. Afr., p. 112. \*  
 stellatus Cup. *Trim. Trans. Ent. Soc. Lond.* 1883, p. 349.  
 stormsi Cup. *Robbe Ann. Soc. Ent. Belg.* 36, p. 132.  
 strigatus Cup. *Aur. Seitz, Macrolep.* 13, p. 490.  
 styx Axioc. *Rbl. Verh. Zool. Bot. Ges. Wien.* 58, p. 159.  
 subaurea Spind. *Sm. Novit. Zoolog.* 5, p. 358.  
 subditus Cup. *Sm. Rhopal. Exot. Lyc. Afric.* p. 129. \*  
 subinfusata Stug. *Grünb. Denkschr. Med. Ges. Jena* 16, p. 107.  
 sublustris Epit. *B.-Bak. Ann. Mag. Nat. Hist.* 1904, 14, p. 228.  
 submacula Lipt. *Lathy Trans. Ent. Soc. Lond.* 1903, p. 196. \*  
 subornata Myr. *Lathy Trans. Ent. Soc. Lond.* 1903, p. 198. \*  
 subpallidus Cup. *B.-Bak. Trans. Ent. Soc. Lond.* 1922, p. 350. \*  
 subpunctata Lipt. *B.-Bak. Ann. Mag. Nat. Hist.* (7) 18, p. 340.  
 subpunctata Teriom. *Ky. Ann. Mag. Nat. Hist.* (5) 19, p. 364.  
 subundularis Lipt. *Stgr. Iris* 4 (1891), p. 215.  
 subvariegata Lipt. *Sm. & Ky. Rhop. Ex.* 14 Lyc. Afr. p. 43. \*  
 sudanicus Iol. *Aur. Arkiv f. Zool.* 2 : 12, p. 15.  
 suquala Lyc. *Pag. Jahrb. Nassau. Ver. Nat.* 55, p. 155.  
 sybaris Cup. *Hpfgr. Mon. Akad. Wiss. Berlin* 1855, p. 642.  
 sylpha Pent. *Ky. Ann. Mag. Nat. Hist.* (6) 6, p. 266.  
 sylphida Pent. *Stgr. Iris* 4, p. 217.  
 sylvanus Lyc. *Drury Ill. Exot. Insect.* 2, p. 5. \*  
 synchrematizus Cup. *B.-Bak. Trans. Ent. Soc. Lond.* 1922, p. 323. \*

tachyroides Pent. *Dew. Nov. Act. Acad. Cur.* 41 (2), p. 201. \*  
 taikosama Phas. *Wallgr. Rhopal. Caffr.* p. 43.  
 tajoracus Iol. *Wkr. Entomologist* 5, p. 51.  
 tamauba Chloros. *Wkr. Entomologist* 5, p. 51.  
 tantalus Cup. *Trim. South-Afric. Butt.* 2, p. 38.  
 tavetensis Spind. *Lathy Trans. Ent. Soc. Lond.* 1906, p. 6. \*  
 telesippe Pent. *Grünb. Sitz.-Ber. Ges. Naturf. Berl.* 1910, p. 473.  
 telicanius Cup. *Lang Verzeichn. Schmett. Augsb.* p. 47.  
 teuera Citr. *Ky. Ann. Mag. Nat. Hist.* (5) 19, p. 365.  
 tenuimarginatus Cup. *Grünb. Sitz.-Ber. Ges. Naturf. Fr. Berl.* 1908, p. 50.  
 tera Larin. *Hew. Ent. Month. Mag.* 10, p. 125.  
 tessmanni Pseuder. *Grünb. Sitz.-Ber. Ges. Nat. Fr. Berl.* 1910, p. 475.  
 theophrastus Cup. *F. Entomol. System.* 3 (1), p. 281.  
 thero Phas. *L. Mus. Ulric.* p. 328.  
 thespis Cup. *L. Mus. Ulric.* p. 318.  
 thyra Phas. *L. Mus. Ulric.* p. 329.  
 thyrsis Lyc. *Ky. Hew. Ill. Diurn. Lep.* p. 224. \*  
 thysbe Phas. *L. Mus. Ulric.* p. 330.  
 timon Iol. *F. Mant. Insect.* 2, p. 65.  
 tintinga Spalgi. *Bsd. Faun. Madagasc.* p. 27.  
 tirza Pent. *Hew. Ent. Month. Mag.* 10, p. 125.  
 tisamena Lyc. *Holt. Psyche* 6, p. 52.  
 togara Cup. *Plötz Stett. Ent. Ztg.* 41, p. 202.  
 torrida Pent. *Ky. Ann. Mag. Nat. Hist.* (5) 19, p. 364.  
 transverstigma Telipna *H. Dre. Proc. Zool. Soc. Lond.* 1910, p. 356. \*

- triangularis Microp. *Aur.* Entomol. Tidskr. 16 (1895), p. 203.  
 trimeni Cup. *B.-Bak.* Trans. Ent. Soc. Lond. 1922, p. 295. \*  
 trimeni Cooks. *H. Drc.* Trans. Ent. Soc. Lond. 1905, p. 257. \*  
 trimeni Iol. *Wallgr.* Oefv. Vet. Ak. Förh. 32, p. 87.  
 trimeni Spind. *Neave* Proc. Zool. Soc. Lond. 1910, p. 50. \*  
 tripunctata Lipt. *Sm.* Rhop. Exot. 29 Lyc. Afric. p. 116. \*  
 tripunctata Pent. *Aur.* Entomol. Tidskr. 16, p. 197.  
 trisignatus Cup. *Strd.* Entom. Rundsch. 28, p. 131.  
 trochilus Cup. *Fr.* Neu. Beytr. 5, p. 98. \*  
 tropicalis Pent. *Bsd.* Voy. Deleg. 2, p. 589.  
 tsiphana Deud. *Bsd.* Faun. Madagasc. p. 25.  
 tsono Cup. *Trim.* Trans. Ent. Soc. Lond. 1868, p. 91.  
 tullia Lipt. *Stgr.* Iris 4 (1891) p. 221.  
 tulliana Lipt. *Sm.* Rhop. Exot. 57 Lyc. Afr. p. 134. \*  
 tumentia Epit. *H. Drc.* Proc. Zool. Soc. Lond. 1910, p. 366. \*  
 turbata Lipt. *Ky.* Ann. Mag. Nat. Hist. (6) 6, p. 263.  
 ubaldus Cup. *Cr.* Exot. 4, p. 209. \*  
 uganda Lyc. *B.-Bak.* Trans. Ent. Soc. Lond. 1910, p. 32.  
 ugandae Hypol. *E.-Sh.* Entomologist 1904, p. 203.  
 ukerewensis Lyc. *Strd.* Entomol. Zeitschr. Stuttg. 23, p. 125.  
 ula Deud. *Karsch* Entomol. Nachr. 21 (1895) p. 316.  
 umbratilis Epit. *Holl.* Psyche 5, p. 425.  
 umbrosus Iol. *Bllr.* Proc. Zool. Soc. Lond. 1885, p. 766. \*  
 unda Deud. *Gaede* Int. Ent. Zeitschr. 9, p. 72.  
 undina Lipt. *Sm. & Ky.* Rhop. Exot. 29 Lyc. Afric. p. 117. \*  
 undifera Argyr. *Stgr.* Iris 4 (1891), p. 215.  
 undularis Lipt. *Hew.* Exot. Butt. Pent. & Lipt. 1. \*  
 unicolor Eresina *Aur.* Svensk. Vet. Akad. Handl. 31, p. 283.  
 unicolor Lyc. *Aur.* Seitz, Macrolep. 13, p. 439.  
 uniformis Epit. *Ky.* Ann. Mag. Nat. Hist. (5) 19, p. 445.  
 unigemmatus Cup. *Bllr.* Proc. Zool. Soc. Lond. 1895, p. 630. \*  
 unipunctata Citr. *B.-Bak.* Proc. Zool. Soc. Lond. 1908, p. 111.  
 urania Epit. *Ky.* Ann. Mag. Nat. Hist. (5) 19, p. 441.  
 usemia Cup. *Neave* Novit. Zoolog. 11 (1904), p. 340.  
 variegata Pseuder. *Sm.* Rhopal. Exot. 14 Lyc. Afric. p. 45. \*  
 variegatus Cup. *B.-Bak.* Trans. Ent. Soc. Lond. 1922, p. 338. \*  
 versatilis Lyc. *B.-Bak.* Trans. Ent. Soc. Lond. 1910, p. 49. \*  
 vestalis Cup. *Aur.* Entomol. Tidskr. 16, p. 219.  
 victoriae Cup. *Karsch* Entomol. Nachricht. 21, p. 300.  
 victoriae Spind. *Bllr.* Ent. Month. Mag. 20, p. 251.  
 viniuga Asl. *Hew.* Ent. Month. Mag. 11, p. 183.  
 violetta Deud. *Aur.* Entomol. Tidskr. 18, p. 216.  
 virgata Deud. *H. Drc.* Ann. Mag. Nat. Hist. (6) 7, p. 365.  
 virinea Epit. *B.-Bak.* Ann. Mag. Nat. Hist. 1904, 14, p. 230.  
 virilis Cup. *Aur.* Seitz, Macrolep. 13, p. 463.  
 vittigera Hypol. *Mab.* Petit Nouv. Entom. 2, p. 289.  
 voltae Lyc. *E.-Sh.* Ann. Mag. Nat. Hist. (6) 6, p. 105.  
 vosseleri Deud. *Strd.* Arch. Naturgesch. 77 (1), p. 195.  
 waggae Spind. *E.-Sh.* Proc. Zool. Soc. Lond. 1898, p. 372.  
 wallengreni Phas. *Trim.* South-Afric. Butt. 2, p. 192.  
 wau Cup. *Wichgr.* Int. Ent. Zeitschr. 14 (1921), p. 172.  
 xanthopoeila Lyc. *Holl.* Entomol. News 4, p. 27.  
 xanthostola Lipt. *Holl.* Psyche 5, p. 429.  
 zebra Batel. *H.-Drc.* Proc. Zool. Soc. Lond. 1910, p. 368. \*  
 zebra Pseudal. *Holl.* Psyche 6, p. 50.  
 zela Deud. *Hew.* Ill. Diurn. Lep. Suppl. p. 14. \*  
 zelia Epit. *Ky.* Ann. Mag. Nat. Hist. (6) 6, p. 272.  
 zeloides Deud. *Bllr.* Ann. Mag. Nat. Hist. (7) 7, p. 289.  
 zelum Deud. *Rbl.* Ann. Wien. Hofmus. 28, p. 265. \*  
 zelza Epit. *Hew.* Ent. Month. Mag. 10, p. 151.  
 zenkeri Lyc. *Karsch* Entomol. Nachr. 21, p. 293.  
 zerita Pseuder. *Plötz* Stett. Ztg. 41 (1880), p. 199.  
 zenxo Phas. *L.* Mus. Ulric. Lep. p. 331.  
 zilka Phas. *Sm.* Rhopal. Exot. (3) 24. Lyc. Afric. p. 121. \*  
 zymna Megal. *Dbl. & Hew.* Gen. Diurn. Lep. Tab. 76. \*



## 9. Family: Hesperidae.

The Hesperids form a very sharply defined systematic unit \*) without any relations to the other Rhopalocera, with which it is certainly not in a genetic connection. By the genus *Euschemon* Dbl., however, in which the hindwings are provided with bristles, the Hesperids approximate the typical Heterocera, though there are no other connecting links known among the now living lepidoptera.

Morphologically, the Hesperids are particularly distinguished by the following characters:

Head large and broad. Eyes large and bare. Palpi large and broad; the first two joints are densely and broadly scaled, closely appressed to the frons; the third joint is sometimes small and hidden by the hairs or scales of the second joint, sometimes long and projecting, always with a very thin, appressed vestiture (usually denoted as „bare“). Proboscis long and strongly developed. Antennae at the base widely separated, with a distinct club; the club often long with a longish, straight or hook-like bent, rarely rounded tip. The different formation of the clubs is of great systematic importance.

The thorax is stout and strongly built, and encloses strongly developed muscles of flight. The wings are comparatively small and exhibit a very plain structure of the veins, all the veins rising from the base of the wing or from the discal cells and running quite separately. The forewing invariably has 12 and the hindwing 8 veins. Vein 2 of the forewing generally rises near the base of the wing far before the centre of the cell; vein 5 rises from the terminal vein of the discal cell, sometimes midway between 4 and 6 and sometimes nearer at one of these veins; vein 11 very rarely anastomoses with vein 12. The discal cell of the forewing is sometimes hardly longer than half the costal margin, sometimes as long as two thirds of it. In the hindwing vein 5 is often feebly developed or sometimes absent altogether.

All the three pair of legs are completely developed; the front tibiae almost invariably with a shin-blade, and the hind tibiae normally with 4 spurs.

The larvae are longish, bare or finely haired and particularly distinguished by the large head and small first joints of the body, whereby the body appears to be strangulated behind the head. They generally live hidden between the leaves of their food-plants, which they have spun together.

The pupae are oblong, usually rounded off without edges, sometimes with an extended apex of the head. They are fastened by the hooks of the cremaster and a thread round the middle, and like the larvae rest between convolute leaves.

In spite of the meritorious works of E. Y. WATSON, P. MABILLE, W. HOLLAND, and many others, the systematic classification of the Hesperids still leaves very much to be desired for. I had hoped to be able to try a new systematism of the African Hesperids. But as this volume of the „Macrolepidoptera“ has to be completed as soon as possible, I am forced to give up my intention, and I have therefore rather closely followed the latest division by MABILLE (in „Genera Insectorum“).

### Review of the Subfamilies.

- A. Last palpal joint long, straight, horizontally porrect. The discal cell as long as two thirds of the costal margin or longer. Vein 5 of the forewing quite straight and running almost exactly in the middle between 4 and 5.
  1. *Ismeninae*.
- B. Last palpal joint not horizontally porrect. The discal cell of the hindwing almost invariably shorter than two thirds of the costal margin.
  - α. Vein 5 of the forewing at its rise more or less bent backwards, and there always nearer to vein 4 than to 6.
    2. *Pamphilinae*.
  - β. Vein 5 of the forewing beginning from its rise quite straight.

\*) In the other volumes of this work dealing with butterflies the *Hesperidae* have therefore been separated from the other families of butterflies as *Grypocera*. Cf. Vol. I, p. 329, and Vol. V, p. 833.

- \*. Vein 5 of the forewing rises somewhat nearer to 4 than to 6, rarely almost in the middle between the veins, in which case, however, the transverse vein (the middle discocellular) is bent between the veins 5 and 6 or relatively short. 3. *Heteropterinae*.
- \*\*. Vein 5 of the forewing rises exactly in the middle between the veins 4 and 6 or nearer to 6. The two transverse veins (the middle and lower discocellulars) between the veins 4 and 6 form a straight line and are longer than in the preceding subfamily. 4. *Hesperiinae*.

The subfamilies stated here according to MABILLE are not sharply separated, as vein 5 of the forewing does not remain quite constant in certain genera and species. This is particularly the case in the second and third subfamilies, because it is often difficult to decide whether vein 5 is quite straight or in the beginning somewhat bent. We therefore advise to look in the review of the genera of the two subfamilies for a species appearing doubtful as to the formation of vein 5.

### 1. Subfamily: **Ismeninae**.

Antennal club elongate, slightly thickened, with a longish, more or less turned down apical part. Vein 5 of the hindwing is absent in the Ethiopian genera, or very feebly developed. No hyaline spots at all.

Large species, the hindwing at the anal angle more or less extended or broadly lobate.

Only two African genera.

### 1. Genus: **Pyrrhochalcia** Mab.

Distinguished from the following genus merely by vein 3 of the hindwing rising before the posterior angle of the discal cell and by the anal lobe of the hindwing being a little broader, shorter, and more rounded off. Sexes different. Head, palpal joints 1 and 2, collar, and at least the three last ventral joints with orange-red hair. Wings beneath metallic green with blackish-blue margins and veins.

*iphis*. **P. iphis** Drury (75 h). Collar only at the anterior edge, and abdomen only on the three last ventral joints with orange-red hair. — ♂. Thorax, abdomen and wings above uni-coloured black with a dark blue reflection. — The ♀ differs from the ♂ by both wings above showing large, oblong, green-scaled antemarginal spots. It attains an expanse of wings of 66 to 88 mm and is the largest of all the *Hesperiidae* known. Larva polyphagous, occurring in the primeval forest, velvety brown, slightly warming into violet, with numerous yellow spots and a red head. Pupa of a lustrous yellowish (?) with black markings; at the anterior edges of the mesodorsum, and at the head there is one obtuse, red-brown projection each; the anal apex ends with two long, rectangularly projecting branches. Sierra Leone to the Congo District.

*juno*. **P. juno** Plötz (75 h) only differs from *iphis* by its smaller size, shorter third palpal joint, the ventrum being red-haired for the greatest part. ♀ unknown to me. Gold Coast.

### 2. Genus: **Rhopalocampta** Wallengr.

Vein 3 of the hindwing proceeds from the posterior angle of the discal cell. Sexes almost similar.

### Review of the Species.

A. Under surface of hindwing uni-coloured without spots or other markings, with darker veins and light fringes at most.

α. Head, palpi, and abdomen beneath orange-red. Both wings beneath with a dull blackish-blue ground-colour. *Rh. aeschylus*.

β. Palpi white or grey with black longitudinal lines. Ventrums white or yellowish.

\*. Fringes of hindwings from the anal angle almost to vein 2 orange, then blackish. Hindwing above for the greatest part clothed with brownish-yellow hair. *Rh. ratek*.

\*\*. Fringes of hindwings white or whitish. Both wings above of a uni-coloured greyish brown or blackish brown. *Rh. libeon*.

B. Under surface of hindwing with distinctly prominent markings.

α. Hindwing beneath with a white or light yellow spot or a similar transverse line.



\*. Under surface of hindwing without deep black dots or spots.

†. Hindwing above at the anal angle with a white spot and white fringes, beneath behind the middle between the costal margin and vein 1 b with a narrow white transverse band. A small white spot or transverse streak at the end of the discal cell on both wings. *Rh. ramanatek*.

††. Hindwing above without the white spot at the anal angle.

§. Body above and the wings at least in the basal parts scaled green or blue. Fringes of hindwings coloured dark. The white spot of the hindwing beneath of a moderate size, only occupying about half the width of the wing. Palpi marked white and black.

1. The white spot of the hindwing beneath is situate at the costal margin. *Rh. chalybe*.

2. The white spot of the hindwing beneath is situate about the centre of the wing between the veins 1 b and 6. *Rh. bixae*.

§§. Fringes of hindwings at the anal angle yellow or reddish-yellow. The white area of the hindwing beneath is very large and, between the costal margin and vein 1 b, it forms a posteriorly very much tapering transverse band.

1. Hindwing beneath without a white spot at the proximal margin in area 1 b. Hindwing above as far as beyond the centre with bright reddish-yellow hair. *Rh. fervida*.

2. Hindwing beneath at the proximal margin in area 1 b with a separate white or whitish spot. *Rh. forestan*.

\*\*. Under surface of hindwing with one or several rounded jet-black dots.

†. Hindwing beneath with but one large black dot situate about the centre of area 1 e.

1. Wings above almost black, at the base broadly haired greenish-blue. The white spot of the hindwing beneath begins at the costal margin and reaches to vein 1 b, but it tapers off very much behind. A small white antemarginal spot in 1 e. Fringes of hindwings dark, only below at the anal angle yellowish. *Rh. pansa*.

2. Wings above grey or blackish-grey without blue scales. The white spot of the hindwing beneath does not reach to the costal margin and is sometimes broken up into spots, but invariably broadest in area 1 e. A yellow antemarginal spot in 1 e. Fringes of hindwing white, at the anal angle yellowish.

a. The white transverse band of the hindwing beneath is complete. *Rh. anchises*.

b. The light transverse band of the hindwing beneath is broken up into spots. The spots are sometimes orange-yellow instead of white. *Rh. jucunda*.

††. Hindwing beneath with 2 to 5 black dots, those in 1 e sometimes being combined and forming a transverse streak, but always situate behind the centre of this area. The light transverse band of the hindwing beneath always begins at the costal margin and at least reaches to vein 1 b. Fringes of hindwing in the anal part always orange.

1. The transverse band of the hindwing beneath is snow-white. Hindwing above at the base and in the centre lighter yellow, at the margin broadly blackish. Hindwing beneath with one black dot each in 2 and 3, and in 1 e with a black transverse streak or with 2 contiguous black dots.

a. Hindwing beneath without a black dot in area 4. The black transverse streak in area 1 e is also towards the margin bordered with white. *Rh. pisistratus*.

b. Hindwing beneath also in area 4 with a black dot; its black transverse streak in area 1 e is towards the margin bordered by an orange spot. *Rh. hanno*.

2. The transverse band of the hindwing beneath is light yellow.

a. Wings above monotonously grey, scarcely darker at the margin. Hindwing beneath with one black dot each in 2 to 4, and with two black dots in 1 e forming a transverse streak. *Rh. necho*.

b. Hindwing above at the base and at the proximal margin broadly haired orange, at the margin broadly black, beneath only in area 2 with a black dot, and in 1 e with a black transverse streak which is bordered with orange towards the margin. *Rh. sejuncta*.

β. Hindwing beneath without a white or whitish spot or transverse band.

\*. Hindwing beneath in the centre of area 1 e with a rounded jet-black spot in an orange area.

*Rh. jucunda* var.

\*\* . Hindwing without such a spot, but in the marginal half of area 1 c with an elongate orange-red spot which is almost entirely parted by a black transverse streak.

1. Forewing above dark brown, hindwing above with orange hair, with a broad black distal margin and costal margin. *Rh. keithloa*.

2. Both wings above metallic violettish-blue with black marginal bands. *Rh. bocagei*.

*aeschylus*. **Rh. aeschylus** Plötz (75 c). „Upper surface blackish-green. Fringes of forewings grey, of hindwings white, at the anal angle reddish-yellow.“ Senegal.

*ratek*. **Rh. ratek** Bsd. (75 f). Both wings beneath quite monotonously dark brown; thorax above with greenish hair. Madagascar.

*tibeon*. **Rh. libeon** Drc. is said to exhibit an indistinct white spot at the anal angle on the hindwing beneath. *unicolor*. Angola. — **unicolor** Mab. (75 f) only differs by the absence of this spot. In the ♀ the hindwing beneath is before the margin more or less densely clothed with light grey scales (= **andonginis** Plötz). Cameroon to Natal and *andonginis*. Delagoa. — To this probably also belongs **brussauxi** Mab. which is unknown to me, and has been described according to a single, worn specimen, as follows: „Wings quite black, with a reddish reflection between the veins, the disc of the forewing being of a slightly darker colour; hindwing likewise black, the fringes from vein 4 to the anal angle snow-white; under surface of the wings blackish-brown, lighter at the margin; area 1 of the forewing in the centre light reddish; body on both sides black; ventrum with white hair.“ Congo, on the Ubangi River.

*ramanatek*. **Rh. ramanatek** Bsd. (75 h). Both wings above blackish, in the centre scarcely lighter. Distinguished from all the other species by the snow-white anal spot on the hindwing above. Madagascar.

*chalybe*. **Rh. chalybe** Dbl. & Hew. (75 e). Wings above almost black; in the ♂ the forewing at the base and the hindwing as far as the margin with an intense blue reflection, in the ♀ both wings above are only in the basal parts scaled bluish-green. Togo to Congo.

*bixac*. **Rh. bixae** L. (75 e). Both wings above deep blackish-blue without a reflection, beneath almost black. West Africa.

*fervida*. **Rh. fervida** Btlr. (75 g). Forewing above blackish-brown, only at the base with some reddish-yellow hair; hindwing beneath at the anal angle with a reddish-yellow spot reaching to vein 1 b. Palpi white with black lines. Madagascar.

*forestan*. **Rh. forestan** Cr. (78 i). Forewing above almost to the base dark greyish-brown; hindwing, however, in the centre somewhat lighter, light yellowish; thorax above grey-haired. Everywhere on the African Continent, to the south of the Sahara. — Larva of a bluish ground-colour, marked with dark transverse streaks; each joint has in front a broad dark brown transverse band and behind it 2 or 3 darker transverse lines; on the joints 1 to 3 the transverse band reaches to the feet, on the others only to the top of the spiracles; on the joints 5 to 11 the transverse band on each side encloses a light streak, and on the joints 5 to 10 we see between the two first transverse lines a shortened line on the centre of the dorsum. The head is yellow with two transverse rows of black dots, the upper of which consists of 6 and the lower of 5 dots. Pupa greenish, dusted with white; it has two short black tips on each side at the anterior edge of the mesodorsum and *arbogastes*. one on the centre of the head. — **arbogastes** Gn. (78 i) is a separate race occurring in Madagascar, only different by the thorax above and both wings at the base being clothed with light greenish grey hair, and besides by the hindwing above being in the centre lighter whitish-grey.

*pansa*. **Rh. pansa** Hew. (75 e) only occurs in Madagascar.

*anchises*. **Rh. anchises** Gerst. (75 f) is easily discernible by the marks stated in the review. It occurs in East Africa from the Delagoa Bay to the Somaliland, and was also met with in Arabia near Aden.

*jucunda*. **Rh. jucunda** Btlr. is above quite similar to *anchises*, but beneath different by the white transverse band being broken up into about 5 spots one of which, the largest, is situate in area 1 c and encloses the black dot, whilst another is in the discal cell and one each in the areas 2 to 6; the latter are generally indistinctly defined and often united with each other; the figure (75 f) is a copy after BUTLER's original figure and represents a rare aberration being otherwise unknown to me, in which all these spots are reddish-yellow and distinctly defined and the costal margin of the forewing beneath orange-yellow. Peculiar to the Island of Sokotra. — The larva lives on a species of Ficus, it is blackish with a yellow transverse band in the centre of each joint and a yellowish, red-spotted lateral line on the joints 4 to 10; head red with black dots almost as in the larva of *Rh. forestan*.

*pisistratus*. **Rh. pisistratus** F. (75 g) is distributed from Sierra Leone to South Africa, but unknown to me from East Africa to the north of the Delagoa Bay.

*hanno*. **Rh. hanno** Plötz (75 f) is above darker than *pisistratus*; forewing beneath with a small white spot in 5 (and 6). Sierra Leone to Gabun.



**Rh. necho** Plötz (75 h) is distinguished by the almost monotonously light greyish-brown upper surface *necho*, of both wings. In all the specimens before me the hindwing beneath lacks the two distal black dots in the area 1 c, which occur in PLÖTZ's description and in his figure we have copied here. That form may be called ab. **tripunctata** ab. nov. Sierra Leone to Gabun. *tripunctata*.

**Rh. sejuncta** Mab. & Vuill. (75 f) is easily discernible by the marks stated in the review. East Africa: *sejuncta*, Usagara.

**Rh. keithloa** Wallengr. (75 g). Both wings beneath of a monotonous blackish-grey ground-colour. *keithloa*. Hindwing beneath with an oblong orange spot at the anal angle in area 1 b and with similarly coloured fringes from the proximal margin to the centre of the distal margin. Cape Colony to Delagoa Bay. — The larva is very much like that of *Rh. forestan*. Head cordiform orange-red with two horizontal transverse rows of purple brown dots, 4 in the upper row and 5 in the lower. Body with a yellow ground-colour; first joint, however, uni-coloured brown; the others in front with a broad purple brown transverse band and behind it with one (joints 2 and 3) or two (the others) similar transverse lines; lateral line on the joints 2 to 12 light red; thoracal feet light red with yellow claws. Pupa yellow or reddish and covered with a chalk-coloured irroration. — **tancred** Plötz (75 g) only differs by the fringes of the hindwing being orange-red as far as the apex of the wing, *tancred*, and it is probably only an aberration of *keithloa*. Natal.

**Rh. bocagei** Em. Shp. is said to resemble *keithloa* on the under surface. Forewing beneath quite *bocagei*, brown with a faint bluish lustre, hindwing also beneath brown, but with a somewhat triangular, bright orange-red spot enclosing three large black spots. The first spot in area 1 c, the second in 2, and the third in 4; a small orange spot outside of the larger spot, and a broad orange stripe at the end. It only occurs in the Island of St. Thomas and belongs to the highly interesting, endemic forms of that island.

## 2. Subfamily: Pamphilinae.

To this subfamily all the genera are reckoned, in which the vein 5 of the forewing is a little posteriorly bent at its beginning and distinctly rises nearer at vein 4 than at 6. As I am positive that *comma* L. must be regarded as the type of the genus *Pamphila* F. \*) and not *palaemon*, I have denominated this subfamily as *Pamphilinae*.

I. Third palpal joint noduliform or coniform, generally not or only slightly projecting beyond the hairing of the second joint, rarely distinctly haired or scaled.

A. Antennae long and extending far beyond the centre of the forewing; the frequently reverted, narrowed apical part of the antennae is also long and much longer than the largest transverse section of the club.

α. Palpi porrect; third palpal joint large and thick, coniform.

6. *Gamia*.

β. Palpi bent up, appressed to the frons; third joint much smaller, not porrect.

\*. Veins 3 and 4 of the forewing at their rise just as far or farther separated than the veins 4 and 5.

†. Margin of forewing straight. Wings above uni-coloured or only at the costal margin of the forewing somewhat lighter, without any hyaline spots.

1. *Acallopiestes*.

††. Margin of forewing more or less bent. Wings very rarely above uni-coloured.

§. Head scaled quite yellowish-red. Wings above partly with a bluish or greenish reflection without any hyaline spots.

7. *Pteroteinon*.

§§. Head not conspicuously coloured. Wings above without a metallic reflection, but forewing generally with light spots.

o. Vein 2 of forewing rises in or before the centre of the discal cell.

— Hindwing above uni-coloured blackish-brown, without spots or rarely spotted white.

8. *Caenides*.

— Hindwing above for the greatest part yellow or yellowish-brown or with a yellow discal band.

1. Hindwing beneath with some white spots encircled with black. Last palpal joint short, coniform. — ♂ hindwing above in areas 1 c, 2, and in the discal cell with a distinctly defined, oval, brown or blackish mealy spot.

23. *Osmodes*.

\*) In the description of the genus *Pamphila*, FABRICIUS says: „Club with a small recurved hook“, which applies to *comma*, but not to „*paniscus*“. A species to which the description does not apply, cannot be regarded to be the typical one.

2. Hindwing beneath without white spots.
- a. Last palpal joint small and almost hidden in the scales of the second joint.
- a'. Forewing beneath at the base with a large black spot covering the base of the discal cell and of the areas 1 a and 1 b and projecting also a little into area 2. Hindwing beneath without spots. — ♂ forewing generally above with a fine black mealy streak from the anal margin to vein 5. 24. *Rhobdomantis*.
- b'. Forewing beneath without a black basal spot. Hindwing beneath with some black dots. — ♂ hindwing in the centre with a hyaline spot. 25. *Osphantes*.
- b. Last palpal joint large and thick, coniform and straightly porrect. Hindwing beneath with black dots. — ♂ hindwing above with a smooth, grey mealy spot in the discal cell. 26. *Parosmodes*.
- oo. Vein 2 of the forewing rises much nearer at vein 3 than at the base of the wing. Discal spots beneath partly with a silvery pupil. 16. *Ceratrachia*.
- \*\* . Vein 4 of the forewing rises nearer at vein 3 than at 5. Wings generally above uni-coloured black without hyaline spots. 9. *Semalea*.
- B. Antennae short or moderately long, rarely long; antennal club at the end almost rounded off without a point, or with a distinctly deposited point which is generally almost rectangularly bent down, short and never longer than twice the thickness of the club.
- α. Antennae or at least antennal club partly clothed with snow-white scales.
1. Spiral tongue short, stunted. 2. *Ploetzia*.
2. Spiral tongue long, strong. 3. *Zophopetes*.  
4. *Chioneigia*.  
5. *Chondrolepis*.
- β. Antennae without snow-white scales.
- \*. Vein 5 of hindwing distinct, although sometimes fainter than the others.
- †. Antennal point at least as long as the club is thick.
- §. Vein 2 of forewing rises before the centre of the cell.
1. Vein 4 of forewing rises nearer at 5 than at 3, and vein 5 of hindwing nearer at 6 than at 4. Large species with an expanse of wings of 40 to 52 mm. 10. *Artitropa*.
2. Vein 4 of forewing rises about in the centre between 3 and 5, rarely nearer at 5, and vein 5 of hindwing not nearer at 6 than at 4. Small species with an expanse of wings of only 25 to 30 mm. 17. *Xanthodisca*.
- §§. Vein 2 of forewing rises at or behind the centre of the cell.
1. Third palpal joint slantingly porrect. Wings above with bright yellow markings. 18. *Pardaleodes*.  
19. *Padraona*.
2. Third palpal joint almost straightly raised. Wings above blackish or dark brown, rarely yellowish-brown. Forewing with or without small hyaline spots. 20. *Parnara*.
- ††. Antenna at the tip quite rounded off or with a small point which is not so long as the diameter of the club.
1. Antennae very short, not reaching to the apex of the discal cell of the forewing. Middle tibiae finely spined. 21. *Gegenes*.
2. Antennae somewhat longer, reaching to the apex of the discal cell of the forewing. 22. *Kedestes*.
- \*\* . Vein 5 of hindwing entirely absent. Third palpal joint slantingly turned inwards. 12. *Paronymus*.
- II. Third palpal joint long, cylindrical or subuliform, freely projecting, „bare“.
- α. Vein 5 of hindwing entirely absent. Antennae moderately long, reaching to the discal cell of the forewing. Third palpal joint longer and thinner. 13. *Andronymus*.
- β. Vein 5 of hindwing distinct though feebler than the others. Antennae short, not reaching to the apex of the discal cell of the forewing. Third palpal joint shorter and thicker. 14. *Platylesches*.  
15. *Galerga*.



1. Genus: **Acallopiastes** Holl.

The position of this genus the species of which are only known to me from the descriptions and figures, is somewhat uncertain. Forewing triangular, the distal margin and posterior margin being straight and equally long; vein 5 rises somewhat nearer at 4 than at 6, vein 2 before the centre of the cell, 6 to 8 almost from the same place at the apex of the discal cell. Vein 5 of hindwing is present.

**A. holocausta** Mab. (80 f). Wings above blackish, at the costal margin of the forewing yellowish, *holocausta*, nearly everywhere densely clothed with yellowish-brown hairs and scales; under surface blackish-brown. Cameroon: Barombi.

**A. dimidia** Holl. (79 i). Antennae, abdomen and wings above and beneath monotonously dark brown *dimidia*, with a faint greenish reflection in the centre of the forewing in the intense sunshine. Palpi below orange. Gabun.

2. Genus: **Ploetzia** Saalm.

Proboscis small, almost stunted. Palpi straightly porrect with a short last joint which is covered by the bristly hairing of the second joint. Hind tibiae only with terminal spurs. Forewing elongate with a sharp apex, the margin being in front straight, behind somewhat bent. Hindwing at the anal angle rounded off, shorter than the abdomen.

**P. amygdalis** Mab. (79 i). Wings above uni-coloured blackish-brown, at the costal margin somewhat *amygdalis*, lighter. Forewing beneath blackish-brown, in the apical part lighter whitish with 2 or 3 small black dots. Hindwing beneath whitish-grey, with a slight violet hue, with one black ring each in 1 c to 7 and in the discal cell. Abdomen above dark grey, beneath white-haired. Madagascar.

3. Genus: **Zophopetes** Mab.

This genus was formerly united with *Ploetzia*, but it differs so much by its broader forewings, long, normally developed spiral tongue, the palpi being bent upwards and four spurs on the hind tibiae, that MABILLE was justified in establishing it as a separate genus. By the peculiar marking beneath particularly on the hindwing, however, the species evidently approximate *P. amygdalis*. The sexes of most of the species are different on the hindwing beneath. The species sometimes come to the lantern, and the lustrous silvery antennal club is said to be very conspicuous then.

## Review of the Species.

- A. Forewing above without hyaline spots. Middle tibiae spined. *Z. fiara*.
- B. Forewing above with (yellowish) hyaline spots in the discal cell and in the areas 2 and 3, but not in 4, 5, 7 to 11. Middle tibiae without spines.
  - α. Hindwing beneath without light veins or light longitudinal lines. Only in the ♂♂.
    - \*. Forewing above at the margin from the apex to vein 4 broad white. Cell of forewing only with 1 hyaline spot. *Z. dysmephila* ♂.
    - \*\*. Forewing above not white at the margin. Cell of forewing with 2 hyaline spots.
      - §. Forewing above with a small hyaline dot in area 6, but without a mealy streak. Hindwing above at the costal margin broad white. *Z. capronnieri* ♂.
      - §§. Forewing above with a slanting, black mealy streak from the base of vein 3 into area 1 b, but without a hyaline dot in area 6. Hindwing above not white at the costal margin. *Z. cerymica* ♂.
  - β. Hindwing beneath with one or several light longitudinal stripes or with light veins. Only ♀♀.
    - \*. Forewing only with one hyaline spot in the discal cell. Hindwing beneath only with a light longitudinal line extending from the base to the margin at the end of vein 6. *Z. dysmephila* ♀.
    - \*\*. Forewing with two hyaline spots in the discal cell.
      - §. Forewing without a hyaline dot in area 6.
        - 1. Hindwing beneath before the centre with a broad longitudinal stripe which begins at the base, gradually widens towards the margin and entirely covers area 6. The veins 2 to 4 are lighter than the ground-colour. *Z. cerymica* ♀.
        - 2. Hindwing beneath only with light veins, but without a whitish longitudinal stripe, and in area 6 dark-coloured. *Z. nobilior* ♀.
      - §§. Forewing with a hyaline dot in area 6. *Z. capronnieri* ♀.

- fiara*. **Z. fiara** Btlr. (79 i). Both wings above dark brown without spots; forewing at the base feebly, hindwing in the centre distinctly lighter ochreous-yellowish. Wings beneath particularly in the ♀ lighter, violettish-grey and at the margin more or less speckled blackish; sometimes the centre of the hindwing exhibits traces of a brown transverse band. South Africa, in the Cape Colony and Natal. G. F. LEIGH found the green eggs on the upperside of the leaves of a species of *Strelitzia*. — The young larva is of a bright red with a black head, and like most of the Hesperid larvae it lives in a case formed by the turning over of the rim of a leaf. The adult larva is light green with a very large black and white head and orange-red stigmata; the last abdominal joint is above black. Pupa light brown with a white hue.
- dysmephila*. **Z. dysmephila** Trim. (80 d). The ♂ is at once recognizable by the white marginal band of the forewing and the ♀ by the marking of the hindwing beneath. In the latter the ground-colour of the hindwing beneath along the posterior side of the white longitudinal line is darker than otherwise. — The larva lives on date-palms and has sometimes been injurious to the plantations of this palm in South Africa. Cape Colony to Tabora in East Africa.
- schulzi*. **Z. schulzi** Plötz (79 b) is evidently allied with *dysmephila* and *cerymica*, but only known to me by PLÖTZ' figure which we have copied here. Angola.
- cerymica*. **Z. cerymica** Hew. (= *quaternata* Mab., *weiglei* Plötz) (80 f). The ♂ is described above in the review and also easily recognizable by the figure. The ♀ (80 e) is larger, and above quite different by the absence of the mealy streak on the forewing, beneath by the marking of the hindwing. In a ♂ from the Congo District the hyaline spots on the forewing above are of a bright golden lustre instead of dull honey-coloured. — Pupa brown, finely granulated; the head of the larva seems to have been whitish. In West Africa from Senegambia to Congo. Our figure of the ♀ was copied from PLÖTZ' original figure of *weiglei*-♀.
- capronnieri*. **Z. capronnieri** Plötz (80 e) differs rather much from the other species and is particularly distinguished by the white costal margin of the hindwing above in the ♂. The ♀ is unknown to me, but it is said to lack this white costal margin. Gold Coast to Congo.
- nobilior*. **Z. nobilior** Holl. (80 b) is only known to me in the female and easily discernible by the under surface from the ♀ of *Z. cerymica*. French Congo.

#### 4. Genus: **Chioneigia** Heron.

I have not been able to examine the only species of this genus. But most probably *Chioneigia* is identical with the following genus. The most important marks stated by HERON are: antennae slightly longer than three quarters of the forewing; the club about as long as a third of the stalk and with an indistinctly deposited tip which is hardly longer than half the diameter of the club. Palpi porrect, the last joint almost hidden by the scales of the second joint. Forewing with a rather sharp apex; discal cell shorter than two thirds of the wing, vein 5 bent at the base and much nearer at 4 than at 6; vein 2 a little nearer at the base than at vein 3. Discal cell of hindwing reaching to the centre; vein 5 feebly developed almost in the centre between 4 and 6; vein 2 much nearer at vein 3 than at the base of the wing. Hind tibiae with one pair of spurs.

- leggei*. **Ch. leggei** Her. ♂. Antennae above white, below brownish. Wings above dark brown; forewing with 7 small yellowish hyaline spots (two in the apex of the cell, and one each in 2, 3, 6 to 8, of which that in 2 is somewhat larger and transverse); hindwing uni-coloured without markings. Forewing beneath with the same spots as above, but at the margin lighter violettish-grey, and at the proximal margin in 1 a and 1 b as far as beyond the centre yellowish. Hindwing beneath violettish-grey, at the proximal margin, at the base and at the costal margin broad dark red-brown, and in the centre with a dark transverse band proceeding from the apex of the wing, tapering off inwards and ending pointed at vein 1 b; some similar antemarginal spots. The ♀ differs only by somewhat broader forewings being more rounded off at the margin, and the somewhat lighter under surface. Expanse of wings: 33 mm. Ruwenzori.

#### 5. Genus: **Chondrolepis** Mab.

MABILLE founded this genus upon *Pamphila murga* which he described in the year 1890, from Caffraria. I have not seen any authentical specimens of this species, but according to the description *murga* is undoubtedly the same species as *Hesperia niveicornis* Plötz (78 g) or at least very closely allied with it. MABILLE describes the genus, as follows: „Antennae long and stiff. Club fusiform, reversedly oviform with a short, scarcely bent tip which is as long as the transverse section of the club. Second palpal joint rising, clothed with stiff hairs and projecting beyond the eyes; third joint short, coniform, obtuse, slantingly turned forward. Forewing with a sharp apex and almost straight (♂) or in the centre bent margin; costal margin at the base bent, in the centre, opposite the cell-end, slightly emarginated; vein 5 at its base sharply bent, 3 rising very near at 4,



and 2 before the centre. Hindwing: vein 5 developed, and 2 and 3 nearing each other. The scales on the under surface of the wings, particularly of the hindwing and on the ventrum of an uncommon size. Hind tibiae shorter than the tarsi with abundant soft hairing and a pair of terminal spurs. The forewing in all the species shows above a yellow spot in 1 b, and 6 or 7 hyaline spots (two in the apex of the discal cell, a larger one in 2, a small one close at the base of area 3 and one little dot each in 6, 7 and 8). Hindwing above uni-coloured without markings.

**Ch. niveicornis** Plötz (= *murga* Mab., *albicornis* Btlr.) (78 g). Both wings above of a dark brown or blackish-brown ground-colour; forewing beneath at the costal margin and in the apical part light ferruginous, behind it blackish and between vein 4 and the apex with a row of dark spots which may also be united forming a submarginal band; hyaline spots as above, the dot in 8 often absent. Hindwing beneath light ferruginous or yellowish-brown; a postdiscal, darker, sometimes indistinct transverse band proceeds from vein 1 b, extends towards the apex of the wing and gradually tapers off; more or less distinct dark spots occur besides in the basal part and at the margin. In all the specimens before me (3 ♂♂) the hind tibiae have 4 spurs. MABILLE's statement is probably due to an error in the observation. Angola, Rhodesia, „Caffraria“, Nyassa Land, Kilimandjaro. *niveicornis*.

**Ch. telisignata** Btlr. is above very much like the preceding species and only differs by its darker blackish ground-colour and larger hyaline spots of the forewing, beneath it is also much darker coloured and distinguished by the hindwing showing in the centre a sharply defined white spot or transverse band. Palpi as well as front tibiae and front tarsi partly white; thorax blackish; ventrum densely clothed with grey hair; anal pencil whitish. Expanse of wings: 32 mm. Nyassa Land and British East Africa. *telisignata*.

## 6. Genus: **Gamia** Holl.

Large, variegated species distinguished by the strong, almost straightly porrect palpi. Frons right behind the palpi with a transverse band of erect scales. Margin of forewing in the centre bent, hindwing with a distinct anal lobe. Vein 2 of the forewing rises a little before the centre of the cell, that of the hindwing behind the centre. Vein 5 of the hindwing well developed. Spiral tongue very long. Hind tibiae with 4 spurs. Forewing with large hyaline spots; hindwing above with a transverse row of yellow spots.

The forms known hitherto have the following markings in common: forewing above in 1b at the submedian with two spots, a yellow one before the centre and a yellowish hyaline spot a little behind the centre, in 2 with a large, oblong, yellow hyaline spot which, however, does not cover the base of the area; in the discal cell with a similar spot beginning nearer at the base, but not reaching to the apex of the cell; in 3 with a much smaller and somewhat lighter hyaline spot near the centre of the area, and before the apex of the wing in the areas 6 to 8 with three small whitish hyaline spots in a slanting transverse row, the spot in 6 being the largest. The under surface of the forewing differs by the proximal margin being almost quite yellow in 1a and 1b, the number of the subapical hyaline spots being four, since there is also in 9 such a spot, the costal margin being at the base and in the centre more or less brightened up, and by the areas 4 to 7 being decorated with rounded dark brown marginal spots. The hindwing exhibits above a yellow-haired longitudinal spot in the discal cell and behind the centre a transverse row of 4 or 5 small yellow spots (in 1b to 5). Beneath these spots are less distinctly ferruginous-brown or greenish. Fringes dark brown, between the anal angle and vein 2 of the forewing and between the anal angle and almost to vein 2 of the hindwing yellowish.

**G. galua** Holl. (= *ditissimus* Mab., *zintgraffi* Karsch) (79 h). Hindwing beneath with blackish-brown, ferruginous-brown and grey markings without green spots. *galua*.

**G. buchholzi** Plötz (80 g). ♀. Hindwing beneath with greenish discal spots and a thick greenish longitudinal streak in the discal cell. Our figure is a copy of the original figure by PLÖTZ. The ♂ is unknown, and I do not possess sufficient material for stating any other differences between the two species. — **basistriga** Holl. which the author himself unites with *buchholzi*, seems to me to agree better with *galua*. Both the species exhibit at the base of the hindwing beneath a more or less distinct white transverse streak. Gold Coast: Aburi. *buchholzi*. *basistriga*.

## 7. Genus: **Pteroteinon** Wts.

Discal cell of the forewing long, attaining about two thirds of the forewing. Vein 5 of the forewing rises before the centre of the cell. Vein 5 of the hindwing distinct. Hind tibiae hairy with 4 spurs.

**Pt. laufella** Hew. (80 g). Wings above dark brown, forewing almost entirely, hindwing at the margin broadly covered with a dark blue or green reflection, veins of a darker colour. Forewing beneath at the posterior margin in 1 a and 1 b brown, in the discal cell and in the basal part of the areas 2 and 3 with a bluish or greenish reflection, then lighter brown with dark veins. Hindwing beneath light greenish with dark veins. Abdomen beneath at the apex haired reddish-yellow. Gold Coast to Congo, Madagascar (?). *laufella*.

8. Genus: **Caenides** Holl.

Antennae long, reaching to the apex of the discal cell of the forewing; the long and thin antennal tip is bent down. Vein 11 of the forewing straight and separated from vein 12. Vein 5 of the hindwing distinct. Large or medium sized species, generally with large, honey-coloured, or smaller, whitish hyaline spots on the forewings.

## Review of the Species.

## I. Forewing above with hyaline spots.

## A. Forewing above with a hyaline spot in area 2.

α. The hyaline spot in area 2 of the forewing is always nearer at the base than the spot in area 3.

\*. The hyaline spot in area 2 of the forewing is small, broader than long, rarely almost square or elongate, whitish or yellowish, not of a pure white. Area 1 b of the forewing without a spot or with a small spot which does not touch the spot in 2.

§. Forewing with a hyaline dot in area 5 \*), as well as in 4 \*).

o. Hindwing beneath deep blackish-brown without spots or with some minute white dots at most; above uni-coloured or with a transverse row of light dots (♀).

1. Forewing in the discal cell with two oblong, separate hyaline spots, which may also be united into one spot. Hindwing beneath at the margin lighter violettish-grey. — ♂. Forewing above between the base of vein 2 and vein 1 with a fine mealy (androconial) streak. Hindwing with a large black hairy spot in the centre.

a. The hyaline spots of the cell of the forewing are separated or only contiguous; the hyaline spot 2 is smaller and short, or only extended into a point at vein 1. *C. dacela*.

b. The hyaline spots of the cell of the forewing are united into one large, rectangular spot; the hyaline spot 2 is larger and oblong. *C. soritia*.

2. Forewing in the discal cell only with two entirely separate hyaline dots. Hindwing beneath as far as the margin brown, only somewhat lighter than in the centre. — ♂ unknown. *C. corduba*.

oo. Hindwing beneath with a whitish-yellow ground-colour and blackish-brown spots and markings; above behind the centre with a yellow spot in 4 and 5. *C. lacida*.

ooo. Hindwing on both sides with a white transverse band. *C. malthina*.

§§. Forewing without a hyaline dot in area 5.

o. Forewing with a hyaline dot in area 4. Hindwing beneath on a grey ground with transverse rows of dark spots. *C. cylinda*.

oo. Forewing above without a hyaline dot in area 4.

†. Abdomen above as far as the apex brown.

1. Hindwing beneath uni-coloured dark brown with or without 1 to 3 small whitish dots in 1 c to 3. *C. kanguensis*.  
*C. arela*.

2. Hindwing beneath with dark markings on a lighter ground.

a. Large species; expanse of wings about 66 mm. The hyaline spots of the discal cell and of the areas 2 and 3 on the forewing are large and of a bright yellow. *C. balenge*.

b. Smaller species; expanse of wings about 33 mm. The hyaline spots of the discal cell and of the areas 2 and 3 on the forewing are small and whitish. Hindwing beneath with a whitish-yellow ground-colour. *C. zairemba*.

††. Abdomen above in the apical half white. *C. cretacea* ♂.

\*\*. The hyaline spot in area 2 of the forewing is large, of a pure white (snow-white).

o. The hyaline spot in area 2 is only separated by vein 2 from a similar spot in area 1 b; these two spots and the likewise white spot in the discal cell together form a coherent or almost coherent transverse band.

§. Hindwing beneath deep blackish-brown, towards the margin somewhat lighter, but without a white transverse band. *C. hidarioides*.

\*) In the ♂ of *C. dacela* sometimes of a minute size.



§§. Hindwing beneath with a broad, indistinctly defined, whitish median transverse band.

*C. caenira* ♂.

oo. The hyaline spot in area 2 of the forewing is well separated from the spots in 1 b and in the cell.

*C. caenira* ♀.

β. The hyaline spot in area 2 of the forewing is always large, elongate, yellowish, and extends just as far or farther towards the margin than the spot in area 3. Forewing without hyaline spots in 4 and 5.

\*. Hindwing beneath before the centre with a transverse row of three silvery white spots (in 1 c, 7, and the discal cell).

*C. leonora*.

\*\*. Hindwing beneath without silvery spots.

o. Forewing with subapical hyaline spots at least in 6 and 7. — ♂ forewing in the basal part of area 2 within the hyaline spot with a strigiform or comma-like mealy spot, which sometimes reaches to vein 1.

†. Hindwing above uni-coloured blackish-brown without a marking, beneath deep, monotonously umber-brown, with some small light dots. Forewing without a hyaline dot in 8.

1. The hyaline spot in area 6 of the forewing roundish, whitish, and separate. Hindwing beneath with several small white dots.

*C. maracanda*.

2. The hyaline spot in area 6 of the forewing yellowish, elongate and touching the dot in 7. Hindwing beneath with 2 to 4 yellow dots (in 3, 5, 7, and in the discal cell).

*C. binaevata*.

††. Hindwing beneath lighter, variegated, at the base more or less yellow and distally spotted yellow; also above with yellow spots. Forewing above with three subapical hyaline spots (in 6 to 8), of which that in area 6 is always longer and larger than the others.

1. Thorax above with bright yellowish-brown hair. The hyaline spot in the discal cell of the forewing is towards the base transversely cut off. Hindwing beneath without a dark dot in the yellow basal part.

*C. stöhri*.

2. Thorax above with greenish-brown hair. The hyaline spot in the discal cell of the forewing at the median more or less extended towards the base. Hindwing beneath in area 7 with a dark dot in the yellow basal part.

*C. luehderi*.

oo. Forewing without hyaline spots in 6 to 9. Hindwing on both sides uni-coloured blackish-brown without spots. — ♂. Forewing without a mealy spot, but hindwing above in the discal cell with a large, black hair-pencil showing distally.

*C. bengal*.

B. Forewing without a hyaline spot in area 2. Hyaline spots of the forewing small, only in 3 (4), 6 to 8 (and in the discal cell).

α. Expanse of wings about 42 mm. Hindwing above at the margin between the veins 2 and 6 with a narrow, white, proximally dentate marginal band and white fringes.

*C. dacena*.

β. Expanse of wings about 35 mm. Hindwing uni-coloured blackish-brown, without a white marginal band. — ♂. Hindwing above with a large, black hair-pencil in the discal cell.

*C. dacenilla*.

II. Forewing without hyaline spots. Hindwing above uni-coloured blackish-brown without spots or only at the anal angle yellow.

α. Hindwing beneath with a sharply defined white median band from the costal margin into area 1 c, where it is extended in a long point towards the margin; above at the anal angle more or less orange.

*C. orma*.

β. Hindwing beneath without a white transverse band.

\*. Hindwing beneath with a black spot in the discal cell and black discal spots. Forewing beneath at the anal margin broad white.

1. Hindwing beneath with a greenish ground-colour. Cheeks, sides of the palpi, and forewing beneath at the base of the costal margin orange. Fringes of hindwings white. Abdomen beneath orange.

*C. iricolor*.

2. Hindwing beneath with a reddish-brown ground-colour. Abdomen not haired orange.

*C. latercula*.

\*\*. Hindwing beneath uni-coloured without spots. Forewing beneath at the anal margin only feebly lighter.

*C. sextilis*.

All the species of this genus exhibit on both wings above a dark brown or blackish-brown ground-colour, and generally distinct hyaline spots on the forewings. The hindwing above is sometimes darker than the forewing, generally uni-coloured without spots.

**C. dacela** Hew. (= *nydia* Plötz) (80 a). In the ♂ the hindwing above is not spotted, in the ♀ it shows *dacela*, a light, often indistinct dot in the discal cell and 4 or 5 whitish discal dots. In the ♀ there is in the area 1 b of the forewing a triangular light spot which lacks the ♂. Cameroon, Fernando Po.

**C. soritia** Hew. (= *podora* Plötz, *xychus* Mab., *xantho* Mab.) (80 a) only differs from *dacela* by the *soritia* marks stated in the review. Senegal to Gabun.

- cylinda*. **C. cylinda** Hew. (= *calpis* Karsch) (80 d). Easily recognizable by the marking on the hindwing beneath.
- ilerda*. Togo to Angola. — **C. ilerda** Mschr. (80 c) is hardly different. Cf. the figures. Gold Coast. — **C. waga** Plötz (80 d) seems to differ rather much, but it is probably figured from a worn specimen. Gold Coast.
- lacida*. **C. lacida** Hew. (80 d) recalls the preceding species, but it differs by the light yellow ground-colour of the hindwing beneath. Gabun.
- zaremba*. **C. zaremba** Plötz (80 d). This species also approximates the two last species, but it is smaller and different by the differently arranged and less numerous dark spots on the hindwing beneath. Old Calabar to Congo.
- balenge*. **C. balenge** Holl. (80 e, f) is a large, magnificent species which, by the large, bright yellow hyaline spots of the areas 2 and 3 and of the discal cell of the forewing, together with *kanguensis*, forms a fine transition to the species following hereafter. The under surface (80 f) of the hindwing is lighter brown, somewhat clouded, at the margin narrowly and in area 1 c broadly lighter greyish-yellow, with white, black-encircled dots in 2, 5 and 7, of which that in 5 is large and oblong. Sierra Leone and Ogowe.
- kanguensis*. **C. kanguensis** Holl. (80 a). The ♂, like that of *dacela*, shows a mealy streak in the areas 1 c and 2 of the forewing and a large black hairpencil in the discal cell of the hindwing above. The ♀ also exhibits a light spot in the area 1 b of the forewing. Ogowe and Ruwenzori.
- leonora*. **C. leonora** Plötz (80 b) differs from all the other species by the silvery spots on the hindwing beneath. Gold Coast to French Congo.
- maracanda*. **C. maracanda** Hew. (80 c as „*maracandica*“) has been sufficiently described in the review of the species. Cameroon to Angola.
- binaevata*. **C. binaevata** Mab. (80 b) is only known to me from the Ogowe Valley.
- stöhri*. **C. stöhri** Karsch (80 b) is known from Togo, Cameroon and Gabun.
- luehderi*. **C. luehderi** Plötz. This rare species is very closely allied to *stöhri*, but it is easily discernible by the marks mentioned in the review. Forewing above in the area 1 b with one (♂) or two (♀) yellow spots. Hindwing above with a yellow spot in the discal cell, one in 2 behind the centre and generally also with one in 5. Hindwing beneath in the basal third of a bright yellow with a dark dot in area 7, then right across the centre dark brown with indistinct, dark encircled, brownish-yellow discal spots and a similar spot in the apex of the discal cell (one or two spots in 1 c are filled up with whitish), at the margin somewhat lighter yellowish-brown. Palpi, thorax and ventrum yellow; dorsum clothed with brown hairs with yellowish tips. Gold Coast to Cameroon. — **C. umbrina** Rbl. is not before me, but according to the description and figure, it is probably the East African race of *luehderi*. It seems only to differ by the hyaline spot in the discal cell of the forewing being still farther extended towards the base, the hindwing above showing yellow spots also in 3 and 4, and the hindwing beneath being more abundantly and distinctly marked. Captured near Moera in the primeval forest to the north of Lake Edward.
- benga*. **C. bengal** Holl. (80 c) is distinguished by the hindwing being without spots on both sides, the forewing exhibiting only three yellow hyaline spots (in 2, 3, and the discal cell), whilst the ♀ shows besides a small yellow streak in 1 b. Cameroon; Ogowe.
- corduba*. **C. corduba** Hew. (= *massiva* Mab. & Vuill.) (80 e) is known only in the female and recognizable by the marks mentioned above. Sierra Leone to Gabun.
- cretacea*. **C. cretacea** Snell. (= *gonessa* Hew., *leucosoma* Mab., *camerona* Plötz) (77 e \*). It is a riddle to me why this species was placed to *Hypoleucis*, although it exactly agrees with *Caenides* in the shape of the wings, in the structure of the veins, and in the formation of the antennae. The ♂ is recognizable by the apical half of the abdomen being white above. The ♀ entirely agrees with that of *arela*. Both sexes have on the forewing two separate or contiguous hyaline spots in the discal cell, one discal spot each in 1 b to 3, and three subapical dots in 6 to 8, of which that in 7 is smaller and generally placed somewhat more towards the base. Hindwing above without any markings or with a pair of minute, indistinct, grey dots. Forewing beneath at the anal margin in 1 a and 1 b as far as the margin white or grey. Hindwing beneath somewhat hazy, almost unmarked or generally with some light grey postdiscal dots or streaks between the veins 1 b to 7 or rarely with darker, light-edged submarginal spots in the same areas. Sierra Leone to Congo. — Whether *C. areda* differs from *cretacea*-♀ and in what way, I can for the present not decide owing to the lack of material. — **C. ploetziana** Strand is a form from Cameroon, in which the hyaline spots of the discal cell of the forewing are united.
- arela*. **C. arela** Mab. (= *paucipunctata* B.-Bak.) (78 f) recalls *C. corduba*, but it is smaller and without the discal spots 4 and 5 of the forewing. This species was formerly placed to *Parnara*, but by the formation of the antennae and the structure of the veins it agrees better with *Caenides*. West Africa; Ogowe Valley, Rhodesia.

\*) The figure copied from PLÖTZ' original figure of *camerona*.



**C. dacena** Hew. (80 c) very closely agrees with *corduba* in size, shape of the wings, and colouring, *dacena*, and is probably the ♂ of it. Both the species are also known from the same districts. *dacena* is distinguished from all the other species of *Caenides* by the dentate white marginal band on the hindwing above. Sierra Leone to Gabun.

**C. dacenilla** sp. n. Of this new species there are two entirely similar ♂♂ from Cameroon before me, *dacenilla*. Both wings above blackish-brown; forewing with two small, quadrangular, whitish hyaline spots in the discal cell, which are only separated by the fold, a dot in 3 and one minute dot each in 6 and 7, beneath at the apex and anal margin lighter greyish. Hindwing without spots, above in the discal cell with a large black hair-pencil showing distally, beneath at the margin somewhat lighter. Abdomen haired dark brown; palpi with intermixed light grey scales. Antennae blackish; tip of the club long, bent down, yellowish-brown. Expanse of wings: 34 to 36 mm.

**C. hidarioides** Auriv. (= *artopta* Drc.) (80 a) differs from the ♂ of the following species particularly *hidarioides*, by the dark, unspotted underside of the hindwing and the smaller hyaline spots of the forewing. Cameroon to Congo.

**C. caenira** Hew. (♀ = *calpis* Plötz) (79 h, 80 c). The sexes are very different. In the ♂ the hyaline *caenira*, spots in 1 b, 2, and the discal cell are large and united into a transverse band, and the hindwing beneath shows a coherent, broad, white median band which is dusted with violettish-reddish and indistinctly defined. In the ♀ (79 h, 80 c), however, as the figure shows, the hyaline spots of the forewing are smaller and separated, and the hindwing beneath lacks the coherent median band. Cameroon to Congo. — **ceucaenira** H. Druce is *ceucaenira*, unknown to me. It is described as follows. ♂. Closely allied to *C. caenira*. Upper surface lighter and the pearl-coloured transverse band of the forewing much narrower and parted by the brown veins. On the under surface the light part of the wings is much more extensive and without the reddish-violet dusting in the apical region. Thorax, abdomen, palpi and legs dark brown. Congo: on the Upper Kassai.

**C. orma** Plötz (79 k) is a very different and easily recognizable species. The fringes of the hindwings *orma*, are yellow behind the vein 3. The white transverse band of the hindwing beneath varies a great deal in width and may sometimes be almost linear. Togoland to Ogowe.

**C. iricolor** Holl. (80 e) has been fully described in the review of the species. Cameroon to Ogowe. *iricolor*.

**C. latercula** Holl. (79 k) is very similar to *iricolor*, but smaller and without the yellow markings. *latercula*, Ogowe.

**C. sextilis** Plötz (79 k), figured from PLÖTZ (XX, plate 1352), is unknown to me. The description is *sextilis*, short: „Dark brown, beneath blackish-grey, only towards the anal margin of the hindwing a little duller. Forewing somewhat pointed, hindwing also at the anal angle rounded. 15 mm (length of forewing).“ Gold Coast: Aburi.

**C. proxima** Plötz (79 k). Whether this species belongs to *Caenides*, is uncertain. PLÖTZ only describes *proxima*, it with the following words: „Dark brown. Forewing above on the marginal half hued copper-red, beneath towards the anal angle dull brown; in the cells 2, 3 and 6 very feeble hyaline dots as in *parvipuncta* H.-Schäff. Fringes yellowish-brown. 15 mm. West Africa.“ The figure is said to have been copied from PLÖTZ' figure, but it does not agree with the description \*).

**C. malthina** Hew. (= *euryaspila* Mab.) is easily recognizable by the marking and, owing to the *malthina*, formation of the antennae, it belongs to *Caenides* and not to *Parnara*. Forewing above blackish with a double hyaline spot in the discal cell and 6 or 7 similar discal spots, one each in 2 to 4 (5), 6 to 8. Hindwing on both sides with a broad, white or whitish median transverse band, which is above situate in the areas (1 c) 2 to 4 and beneath between the veins 1 b and 6, without any other markings. Sierra Leone to Gabun.

## 9. Genus: **Semalea** Holl.

This genus is very feebly characterized. From *Caenides* with which it agrees in the formation of the antennal club, it only differs by vein 3 of the forewing generally rising very near at vein 4, and from *Parnara* only by the longer tip of the antennal club. Neither is the position of vein 3 of the forewing always the same in the species of *Caenides*.

\*) Our figure is a copy of the figures on the 1402nd Hesperid plate in PLÖTZ' work, with the statement: West Africa.

## Review of the ♂♂.

## I. Forewing without any white spots.

A. Hindwing above with a large, jet-black mealy spot covering the discal cell and the base of the adjoining areas. Forewing beneath at the anal margin with a hair-pencil. *S. pulvina*.

*S. carbo*.

B. Hindwing above without the mealy spot. Forewing above near the base in the areas 1 b and 2 with a thick, but indistinct mealy spot which is parted by vein 2. Forewing without a hair-pencil beneath at the anal margin. *S. nox*.

## II. Forewing with some small white punctiform spots at least in 2, 3, and 6.

*S. ilias*.

*pulvina*. **S. pulvina** Plötz (79 a). Wings on both sides uni-coloured blackish-brown. In the ♂ the forewing beneath shows a large, somewhat silky anal-marginal spot extending to vein 3, but it is only distinctly prominent in a certain light and it does not reach to the margin. Sierra Leone to Gabun.

*carbo*. **S. carbo** Mab. was already in 1896 mentioned by HOLLAND to be identical with *pulvina*. MABILLE, however, in 1903 considered it yet to be a distinct species, though he did not state any differences. The original description says: „Jet-black with a lustre. At the bases of both wings a black area with a dark blue reflection. Under surface black. Forewing at the base and apex dusted with yellow scales; at the anal margin a large, triangular spot with a silky lustre, extending into area (3) 2. A pencil of black, appressed hairs in area 1 a is covered by the hindwing. Hindwing dusted with lustrous scales of a red reflection. Expanse of wings: 26 mm.“ The description fits specimens of *S. pulvina* lying before me, except that I cannot discover the mentioned red lustre on the hindwing beneath.

*atrio*. **S. atrio** Mab. is on both sides entirely black, the anal margin of the forewing lighter, particularly at the anal angle, where it is soot-coloured. Palpi dark grey, the third joint coniform, hardly projecting. Hind tibiae with two pairs of spurs, clothed with stiff appressed hair. Abdomen slightly longer than the hindwing which is shorter than the forewing, almost as if it were reduced. 25 mm. Cameroon. Probably the ♀ of *pulvina*.

*nox*. **S. nox** Mab. (79 a). Uni-coloured black. The ♂ is easily recognizable by the marks mentioned above. Nigeria to Gabun.

*corvina*. **S. corvina** Mab. is probably the ♀ of *nox*. „Jet-black, in the centre of the hindwing soot-coloured. Forewing beneath black, the areas 1 a and 1 b in their whole length whitish-grey. Fringes and abdomen black. Prothorax with dark grey hair. Expanse of wings: 22 mm.“ Sierra Leone.

*ilias*. **S. ilias** Plötz (78 h) was hitherto placed to the genus *Parnara*. The antennae, however, as the figure shows, are longer than in the said genus with a slender club, which is bent outwards and gradually passes over into the long point, entirely as in *Semalea*. ♂. Both wings above blackish-brown; forewing with small white discal dots in 2, 3, 6 and sometimes also in 7, beneath at the anal margin lighter grey, otherwise as above. Hindwing on both sides uni-coloured blackish-brown. The ♀ besides shows a small white dot in the discal cell of the forewing and generally also a subapical dot in 8. Cameroon; Gabun.

10. Genus: **Artitropa** Holl.

Tip of antennal club moderately long, shorter than the double transverse diameter of the club. Discal cell of forewing long, at least as long as two thirds of the costal margin; apex of forewing extended. Hind tibiae with 4 spurs.

## Review of the Species.

## A. Forewing with distinct hyaline spots.

z. Fringes of forewings at least between the apex and vein 2 uni-coloured dark brown.

§. Hyaline spots of the forewing whitish and small (cf. *margaritata* 80 f); discal cell of the forewing only in the anterior longitudinal half with a hyaline spot, fringes brown.

\*. Hindwing beneath with an irregular, broad, white, lustrous silvery transverse band edged with blackish, between the costal margin and vein 1 b; also at the proximal margin in 1 a with a large, long white spot which sometimes unites with the median band. Veins of the hindwing beneath not white nor whitish. *A. comus*.

\*\*. Hindwing beneath with a broad, white (not lustrous silvery) transverse area which begins at the costal margin and reaches or almost reaches to the proximal margin, but which is always,



at least in the discal cell and in 6 to 8, decorated or interrupted by large, black, oblong spots. Veins of the hindwing beneath white or at least somewhat lighter than the ground-colour.

*A. erinnys*.

§§. The hyaline spots in the discal cell and in area 2 of the forewing are large and yellow. Fringes of the forewing between the anal angle and vein 2 yellow, otherwise brown. *A. shelleyi*.

β. Fringes of the forewings yellow, with dark spots at the ends of the veins. Hindwing above quite dark brown, only behind the centre with a transverse row of 5 or 6 small, yellow discal spots in 1 c to 5: fringes of hindwings yellow. The hyaline spot in the discal cell of the forewing is larger and as broad as the cell itself. *A. hollandi*.

B. Forewing without hyaline spots, above uni-coloured dark brown, only at the base and at the inner part of the proximal margin somewhat hued with greyish-yellow. *A. boseae*.

**A. comus** Cr. (80 f). Fringes of the forewing as far as the anal angle uni-coloured, dark brown. Forewing beneath at the anal margin only feebly lighter yellowish-grey. Hindwing above with a broad yellow median transverse band extending from vein 6 to the proximal margin and being almost equally broad, beneath with a broad silvery white transverse band which is sometimes shaped as in the figure, sometimes almost as in *margaritata*. Margin of the hindwing at vein 1 b somewhat extended, between the veins 1 a and 2 narrowly yellow with yellow fringes. West Africa, from Sierra Leone to Congo. — ab. *reducta* Auriv. differs above by the proximal margin of the hindwing being bright orange from the base to the anal angle and to vein 1 b, and the yellow median band being narrower and towards the base darkened. On the hindwing beneath the white median band also covers the area 1 b and is thus coherent as far as the proximal margin. Congo District: Kimuenza. — **margaritata** Holl. (80 f) is unknown to me in nature, but it apparently differs only by the anal margin of the forewing beneath being white as far as vein 2, and by the white spot in 1 a of the hindwing beneath being absent. Ogowe Valley. *comus*, *reducta*, *margaritata*.

**A. erinnys** Tr. (80 g as *erynnis*) differs above from *comus* by the yellow median band of the hindwing tapering off very much in front, and beneath by the black spots of both wings. South Africa, at least as far as the Zululand. — **ehlersi** Karsch (= *unifasciata* Auriv.) represents the East African race and is distinguished by the yellowish white median band on the hindwing beneath being sharply defined between the proximal margin and vein 5, and by being devoid of spots except a black dot in 1 c. Kilimandjaro. — **comorarum** Oberth. is above distinguished by the area 1 b of the hindwing being bright orange in its whole length as far as the margin. Beneath the white median band, which is broken up into spots, only reaches to vein 1 b. Comoro Islands. *erinnys*, *ehlersi*, *comorarum*.

**A. shelleyi** Em. Sharpe has remained unknown to me. From the circumstantial description we merely state the following, by which the species is easily recognized. Fringes of the hindwings yellow with small dark spots at the ends of the veins. Hindwing above with a yellow spot near the base and a narrow transverse row of yellow spots between the veins 1 b and 6. The under surface is similar to that of *A. erinnys*, but at the anal margin of the forewing as far as the vein 2 broad yellow. West Africa: Fantee. *shelleyi*.

**A. hollandi** Oberth. Wings beneath at the apex of the forewing and at the centre of the margin of the hindwing broadly dusted with violettish-grey; hindwing beneath at the base in 1 c, 7 and 8, and the discal cell with 4 or 5 black, longish spots distally bordered with grey. In the type the forewing above only shows two subapical hyaline dots (in 6 and 7), and the transverse row of yellow spots on the hindwing is pointed towards the proximal margin. Madagascar: Antsianaka. — **alaotrana** Oberth. only differs by the forewing above showing three subapical hyaline dots and by the slightly broader transverse row of yellow spots on the hindwing pointing towards the anal angle. Madagascar: Lake Alaotra. *hollandi*, *alaotrana*.

As I was unable to examine the following species, I cannot decide upon its generic position. SAALMÜLLER placed it to „*Hesperia*“ and OBERTHÜR (1916) to „*Proteides*“, but HOLLAND (1896) and MABILLE (1904) to *Artitropa*.

**A. (?) boseae** Sahlm. (79 i). Hindwing above greyish-yellow, at the costal and distal margins broad blackish-brown; the distal part of the greyish-yellow area is proximally bordered by an incomplete, nebulous transverse band and divided into 5 spots by the dark veins. Forewing beneath dark brown, before the apex mixed with violettish-grey, with rounded blackish marginal spots; at the costal margin two triangular, light violettish-grey spots, the first at the centre of the costal margin, with its apex extending into the discal cell, the second behind the centre longer and somewhat bent, behind it in 5 to 1 b a slanting row of small, indistinctly defined discal spots. Hindwing beneath brown mixed with violettish grey, near the base with a violettish-grey transverse line. Fringes at the anal angle orange. Madagascar: Nossi-Bé. — **aaron** Oberth. only differs above by the hindwing showing a more sharply defined yellow discal band and by being more broadly bordered with orange in the anal region, and beneath by the violettish grey, subbasal transverse line not reaching to the proximal margin. North Madagascar. *boseae*, *aaron*.

11. Genus: **Perrotia** Oberth.

This genus being unknown to me, probably belongs near to *Artitropa* or coincides with it. Nothing is said about the structure of the veins. In the formation of the antennae and in the marking it closely agrees with *Artitropa*. The most important difference, however, appears to me to be the shape of the hindwing, which is entirely rounded off at the anal angle. The forewing shows 5 or 6 small hyaline spots (2 contiguous ones in the discal cell and one each in 2, 3, 6 (and 7), besides a yellow spot or longitudinal streak in 1 b, which is white beneath. Only ♂♂ are known.

*albiplaga*.

**P. albiplaga** Oberth. Hyaline spots of the forewing above yellowish, beneath white. Hindwing above orange, at the anal margin as far as the discal cell and vein 6 broad black and with a black marginal band which ends pointedly at the anal angle. Hindwing beneath of a pure white, at the anal margin as far as the discal cell and vein 7, at the proximal margin as far as vein 1 b and at the distal margin jet-black; the black marginal band is about  $2\frac{1}{2}$  mm broad in area 1 c, but it gradually tapers off towards the costal angle where it is only linear. Fringes of the anal region above yellow, beneath white. Expanse of wings: 40 mm.

*albimacula*.

Madagascar: Fenerive. — **albimacula** Oberth. only differs above by the black marginal band of the hindwing not tapering off towards the anal angle and ending pointedly at the centre of the proximal margin, and by the black marginal band in 1 c being only 2 mm broad, but in 2 to 5 6 mm broad, and being then entirely absent at the apex. The white area thus reaches there to the margin, but it is deeply excised in the centre. North Madagascar: Antakares.

12. Genus: **Paronymus** gen. nov.

The species of this genus were formerly reckoned among *Pardaleodes* (HOLLAND 1896) or *Andronymus* (MABILLE 1903). But they are at once discernible from both these genera by vein 5 of the hindwing being entirely absent or only marked by a fold. Vein 2 of the forewing rises a little before the centre of the cell, vein 4 much nearer at 5 than at 3. The tip of the antennal club is generally straightly porrect, not twice as long as the club is thick. Forewing with two small, generally separated hyaline spots in the discal cell and one each in 2, 3, 6 to 8, besides with a small spot in 1 b at vein 1. Hindwing above with a large light discal spot or a light median band, beneath for the greatest part with a light ground-colour and with a black spot near the centre of area 1 c.

## Review of the Species.

A. Apical half of abdomen above white or rarely only at the apex darkened. The discal band of the hindwing above in the areas 2 and 3 hyaline, semi-transparent.

α. Transverse band of the hindwing above coherent and yellowish. Forewing beneath in the areas 4 and 5 near the margin with a whitish diffuse spot. *P. ligora*.

β. Transverse band of the hindwing above in area 1 c almost interrupted, of a pure white. Forewing beneath without a light submarginal spot in 4 and 5. *P. nevea*.

B. Abdomen above grey or dark brown. Discal area of the hindwing above not showing through in the centre, coloured yellow.

α. Hindwing beneath without a coherent dark marginal band, instead of it only with some dark spots.

*P. xanthias*.

*P. alenica*.

*P. kelembaensis*.

β. Hindwing beneath with a coherent dark, anteriorly tapering marginal band and a yellow, almost spotless ground-colour. *P. xanthioides*.

*ligora*.

**P. ligora** Hew. (= thersander Mab.) (79 h). The yellowish-white median band of the hindwing above extends from 1 a to 6 and is almost equally broad (♀) or anteriorly tapering (♂). Beneath the hindwing is white, at the costal margin in area 8 and close in front of the margin between the proximal margin and vein 6 with a broad black band being widened towards the proximal margin and being red-brown in 1 a and 2 to 4. In addition a generally separate, jet-black spot in 1 c. Sierra Leone to Angola.

*nevea*.

**P. nevea** H. Druce (79 d) is very similar to the preceding and only differs by the marks mentioned in the review. Congo District: Kassai.

*xanthias*.

**P. xanthias** Mab. (79 d). Hindwing above with a large, yellow discal area being on all sides bordered with black. Fringes and a narrow marginal line in 1 a and 1 b yellow. Beneath the hindwing is light yellow,



at the base of the costal margin very narrow black, and with a large black discal spot in 1 c to 3; the dark marginal band is represented by three groups of marginal spots, one in 1 a and 1 b, one in 1 c and 3, and the third at the apex of the wing in 6 and 7. Nigeria to Gabun.

**P. alenica** Strand is unknown to me. „Allied with *Pard. xanthias* Mab. Wings dull black, forewing *alenica*. with 6 dingy white spots: three small, equally sized, somewhat angular punctiform spots forming a triangle which is  $4\frac{1}{2}$  mm distant from the apex of the wing and 1 mm from the costal margin of the wing 1,7 mm broad and 1 mm long. A similar punctiform spot is in the cell at the end of it, and behind the cell there is a subsquare spot towards the margin slightly emarginated, of about 1,2 mm diameter, at the base of area 2, whilst a trapezoid or triangular spot, only half as large, is situate at the base of area 3. Fringes greyish-white with a darker base. Hindwing with a golden yellow median area, so that of the ground-colour only a band remains of  $2\frac{1}{2}$  to 3 mm width covering the distal and costal margins, but the otherwise black fringes are, beginning from the anal angle, yellow in a length of 4 mm, and the apex of the costal margin of the hindwing is linearly yellow. In area 5 the black marginal band is narrowed; in the dorsal area the yellow area almost extends to the base of the wing, but it encloses there a black longitudinal stripe. — Beneath the forewing is as above, but in the centre of the dorsal area with a whitish-yellow area extending to the spot in area 2. The hindwing beneath is whitish-yellow with two black, subelliptic marginal spots and with 4 or 5 minute dark spots in the dorsal area. — Body above black, abdomen, however, with a somewhat greyish-green hairing forming indistinct bands; body beneath white, legs partly dark; Expanse of wings 29, length of wings  $16\frac{1}{2}$ , length of body 14 mm.“ South Cameroon: Alen.

**P. kelembaensis** Strand is neither known to me. „It resembles *Pardaleodes xanthias* Mab. and *kelembaensis*. *xanthioides* Holl., but it differs by the under surface and so on. The under surface of the forewing is as above, but the yellow spot in the centre of the dorsal area is somewhat larger and not distinctly defined, but particularly distally it gradually warms into the colouring of the surroundings. Hindwing beneath for the greatest part of the orange colouring of the median area above, but the costal area is dusted with a blurred dark brownish colour, particularly in the distal two thirds of its length, but it shows there three small, mixed light yellowish spots, whereas in the proximal third of the costal area the yellow colouring expands almost to the costal margin. The marginal line is blackish, and there are 3 or 4 small, irregular, dark sublimbal spots. Fringes in their basal halves as dark as the marginal line, in their apical halves greyish. — Hindwing above with a rounded median area being slightly dentate towards the margin, reaching to the dorsal margin, being 3 mm distant from the costal margin, but very much nearing the margin in the anal angle, otherwise the hindwing is blackish-brown like the forewing. The forewing shows a whitish, quadrangular spot of  $2\frac{1}{2}$  mm length and 1,2 mm width near the base of area 2, behind it, somewhat farther towards the base, an almost equally sized, but roundish and orange spot; in area 3,  $1\frac{1}{2}$  mm distant from the quadrangular spot, there is a roundish white spot of about 1 mm diameter, and a still smaller though similar spot is in area 6; this spot and the two other whitish spots form an oblique row which is slightly bent convex towards the margin and which, together with the yellow dorsal spot, is directed towards the end of the basal third of the dorsal margin and towards the costal margin shortly within its apex. Finally there is a whitish punctiform spot in the cell before the large quadrangular spot; corresponding to this punctiform spot there are on the under surface two similar punctiform spots arranged in a transverse row. Length of forewing 18 mm.“ Congo District: Kelemba.

**P. xanthioides** Holl. (79 f) is easily recognizable by the marking of the forewing, the uninterrupted marginal band and the purely yellow ground-colour of the hindwing beneath. The yellow ground-colour of the hindwing beneath reaches to the costal margin and has but one small black dot in area 1 c. Ogowe Valley.

### 13. Genus: **Andronymus** Holl.

It closely approximates the preceding genus by the marking and the absence of vein 5 on the hindwing, but differs considerably by the long. subuliform, „bare“ terminal joint of the palpus. The genus *Aeromecis* Mab. (1903) is here combined with *Andronymus*.

The forewing shows 6 or 7 white hyaline spots (1 or 2 in the discal cell, one each in 2, 3, 6 to 8), of which that in 2 is the largest and those in 6 to 8 are generally punctiform; that in 6 is always nearer at the margin than those in 7 and 8. Hindwing also with a (large) hyaline spot in the discal cell and generally also with three smaller ones in the areas 1 c to 3. Margin of forewing at vein 4 the most prominent, behind it somewhat emarginated. The two first palpal joints are smoothly scaled. Hind tibiae with 4 spurs. Tip of antennal club short. Palpi in all the species white, the apex of the second joint and the whole third joint brown.

## Review of the Species.

- A. The hyaline spots on the hindwing above are situate in a white or yellow median band, or they are sometimes indistinct above.
- α. Abdomen above in the centre with a white belt, which is sometimes interrupted by dark dorsal spots. Transverse band of the hindwing above white. *A. philander.*
- β. Abdomen without a white belt. Hyaline spots of the forewing and discal area of the hindwing above yellow or yellowish.
- \*. The yellow discal area of the hindwing above is smaller and more remote from the margin. *A. leander.*
- \*\*. The yellow discal area of the hindwing above is larger and, particularly in 1 b and 5, nearer to the margin or almost reaching to it. *A. fenestrella.*
- B. Hindwing above blackish-brown without any other markings but the white hyaline spots. *A. neander.*

*philander.* **A. philander** Hopff. (79 h). Hindwing beneath very similar to that of *P. ligora* Hew., of a pure white, with a small dot in the basal half of area 1 c, and large coherent brown discal spots in 1 c and 2. The marginal band consists of two divisions being separated in area 1 c, the first of which is situate in the areas 1 a to 1 c, being separated from the margin by a white line and being red-brown in 1 a, whilst the second is dusted with brown, approximating the margin and ending pointed at vein 8. At the centre of the anal margin of the forewing beneath an indistinctly defined white spot reaches to vein 2. West Africa: Togoland to Angola. Portuguese East Africa. — Larva green, powdered with white, with a red, yellow-spotted head. The pupa rests in a leaf which has been spun together, and it is greyish-white with a somewhat darker dorsal side.

*leander.* **A. leander** Plötz (= *coander* Mab.) (79 g) only differs from *philander* by the marks stated in the review and is probably only a form of this species.

*fenestrella.* **A. fenestrella** B.-Bak. The ♂ is described by the author as follows: „Forewing sooty-black with a hyaline spot in the angle of vein 2, a small one near the base of area 3, and 3 hyaline dots in a triangle at the costal margin, about a third from the apex of the wing. Hindwing sooty-blackish in the centre with a large transparent area which is surrounded by light yellow colouring and parted; a light yellowish stripe along the fold: the hair-pencil of the ♂ is light brownish-grey, at the apex grey.“ To this description NEAVE who collected the species in Rhodesia added yet later on: „The ♀♀ are distinguished by a greater extent of the ochreous-yellow part of the hindwing above, extending between the veins 2 and 7 and at the anal angle almost to the margin; this is particularly beneath very distinct. The hyaline spots of the ♂ hindwing are absent.“ There is only one ♀ from Rhodesia before me, having been captured by NEAVE. Its hindwing beneath is almost entirely yellowish-white without any other dark markings but a short stripe in the area 8 at the base of the costal margin, an indistinct brown dot in the basal part of area 1 c, and two large, entirely separate, black marginal spots, one of which is in 2 to 4, the other in 6 and 7; the white ground-colour thus reaches to the margin in 1 a to 1 c and in 5. Congo District: Makala-Beni and Rhodesia.

*neander.* **A. neander** Plötz (= *producta* Trim.) (79 g, h). Hindwing beneath dark violettish-grey with some blackish spots and beside the hyaline spots only with an oblong whitish spot in the basal half of area 1 b. Gabun to Cape Colony and Delagoa.

14. Genus: **Platylesches** Holl.

Strongly built Hesperids with a stout body and broad wings, with short antennae and the terminal joint of the palpus projecting from the scaling of the second joint. Vein 5 of the forewing rises much nearer at 4 than at 6. Hind tibiae with 4 spurs. Smaller species with an expanse of 25 to 38 mm.

These marks, as well as the upper surface of both wings, being almost similarly coloured in all the species, make it very easy to ascertain the species belonging to this genus. Both wings above blackish or blackish-brown. Forewing above with 8 small white hyaline spots (2 oblong ones near the apex of the discal cell and one each in 2 to 4, and 6 to 8; that in 2 is always angular and somewhat larger than the others) and a triangular, white or yellowish spot in 1 b near the centre of vein 1 b; the proximal half of the anal margin with a narrow stripe with white or yellowish hair. Hindwing above with a transverse row of 4 to 6 whitish or yellowish, hairy, not transparent discal spots. Prothorax and underside of palpi white or yellowish. The species are very much alike and chiefly only differ by the marking on the hindwing beneath.

## Review of the Species.

- A. Apex of the abdomen above purely white. The discal spots 3 and 4 of the forewing are small, almost punctiform, entirely separated from each other and with the spot in 2 arranged in an almost straight line directed towards the apex of the wing. The hyaline dot 8 of the forewing is generally absent above.



- α. Hindwing beneath monotonously dark brown with a bent row of dark, often light-ringed spots in 2 to 6, sometimes also with a white spot in 1 c. *P. galesa*.
- β. Hindwing beneath at the margin dusted with whitish and with lighter veins, a white spot in 1 c. Forewing beneath in 1 b with a distinct white longitudinal patch. *P. nigricans*.  
? *P. depygatus*.

B. Abdomen above at the apex dark-coloured.

- α. Hindwing beneath with a light median transverse band at least between the costal margin and vein 1 b.

\*. The transverse band of the hindwing beneath is interrupted in area 1 b.

§. The transverse band of the hindwing beneath is very indistinctly defined, violettish-grey and diffuse; the area between the margin and the band is dark brown. *P. moritili*.

§§. The transverse band of the hindwing beneath is distinctly defined, white or yellowish.

1. The hyaline spots 3 and 4 of the forewing are small, punctiform and separate. The transverse band of the hindwing beneath is only about 2 mm broad, white. Margin of the forewing before the anal angle distinctly emarginated. *P. picanini*.

2. The hyaline spots 3 and 4 of the forewing are oblong and only separated by vein 4. The transverse band of the hindwing beneath is about 4 mm broad, light yellowish. *P. goetzei*.

3. The hyaline spot in 4 is absent. The discal cell of the forewing only shows a hyaline spot situate near the anal angle. *P. subnotatus*.

\*\*. The transverse band of the hindwing beneath is coherent from the costal margin to the proximal margin, sharply defined, in the areas 1 a to 1 c white, in 2 to 6 yellow. Hyaline spots 3 and 4 of the forewing separate. *P. lamba*.

- β. Hindwing beneath without a light transverse band, but generally as above with a transverse row of light spots.

\*. Both wings or at least the hindwing beneath at the margin of the ground-colour, dark brown or blackish. Hindwing beneath with a generally distinct transverse row of light spots. The hyaline spots 3 and 4 of the forewing are small and separate.

1. Hindwing beneath of a grey ground-colour and with distinct discal spots. *P. amadhu*.

2. Hindwing beneath of a blackish ground-colour. *P. chamaeleon*.

\*\*. Both wings beneath at the margin between the apex and vein 2 more or less clothed with lighter scales, but in the area 1 b of the hindwing monotonously dark brown.

1. Almost the whole under surface of the hindwing is thinly strewn with small grey scales.

*P. ayresi*.

2. Both wings beneath between the apex and vein 2 with a broad, violettish-grey marginal band.

*P. robustus*.

*P. ertli*.

**P. galesa** Hew. (79 a) is the largest species of the genus and easily recognized by the marks stated *galesa*, in the review. Guinea. — **nigerrimus** Btlr. (79 b), as the figure shows, differs but slightly from the type, *nigerrimus*, British Central Africa.

**P. nigricans** Holl. (79 b). Both wings above black; hindwing with white fringes; otherwise particularly *nigricans*, distinguished by the light dusted veins and the black colour of the distal part of the areas 1 a to 1 c on the hindwing beneath. Sierra Leone to Gabun.

**P. depygatus** Strand was described after a specimen lacking the apex of the abdomen and therefore *depygatus*, denominated *depygata* (= devoid of the anus) (!). The circumstantial description of the upper surface and under surface of the forewing does not contain any essential differences from *P. nigricans*; but the under surface of the hindwing is described as follows. „The hindwing is beneath hued with violettish particularly in the basal area; the markings are faded violettish-whitish, and consist of a postmedian, irregularly zigzag-shaped, narrow band extending between the dorsal vein 8, the posterior half corresponding with the band above, moreover of a light longitudinal stripe extending along the whole dorsal margin, a spot in the cell at the costal margin, and finally the veins are for the greatest part lighter and partly connected by light transverse streaks; the whole forms an extinct, irregularly reticulate, blurred marking.“ Nyassaland. If the apex of the abdomen is white, *depygata* probably belongs to *nigricans* as an eastern race.

**P. moritili** Wallengr. (79 a) is the species of the genus being known longest and occurs in the *moritili*, whole of South Africa as far as the Congo District. It is particularly distinguished by the indistinctly defined transverse band of the hindwing beneath. The fringes on the hindwing beneath between the anal angle and vein 2 are broad uni-coloured white or light yellow, then between 2 and 7 grey or at least with a broad grey basal line. — **costalis** form. nov. differs by the costal margin of the hindwing beneath being yellow in its whole width *costalis*.

as far as the discal cell and distally to vein 8, and by the fringes of the hindwing beneath being yellowish at the tips between the veins 2 and 7. Congo District.

*zephora*. **P. zephora** Plötz (78 b, 79 c; after PLÖTZ) is unknown to me. It is described as follows: „Hindwing beneath pale reddish-grey, dusted or watered with brown, mostly with a broad dark margin and white fringes. Shape strong. Antennae half the length of the forewing; the latter exhibits in cell 1a a yellow longitudinal stripe, in cell 1 b a yellow spot, in cell 2 a white hyaline spot, above it in the discal cell two, in 3 and 4 two above each other, and three dots in 6 to 8. Hindwing above with a rather narrow, bent, light yellow transverse band crossed by the black veins, in 1 c to 6, beneath the cell 1 b and the margin are unequally broad brown. 13 mm. Angola.“ It is certainly a species of *Platylesches*.

*picanini*. **P. picanini** Holl. (79 b, c) differs from the other species by the shape of the forewing. HOLLAND states as the patria at first Liberia, then only Ogowe, and it also occurs in the southern Congo District.

*goetzei*. **P. goetzei** Grünb. (= *junodi* Oberth.) (79 h). According to the description and figure, the species is particularly distinguished by the broad light yellow, sharply defined, but in 1 c interrupted transverse band on the hindwing beneath. Portuguese and German East Africa to Lake Tanganyika.

*subnotatus*. **P. (?) subnotatus** Holl. (79 c) was described as *Parnara* (?), and later on placed to *Platylesches* by MABILLE. The species is only known to me from the figure. It is particularly distinguished by the forewing showing but one spot in the discal cell (at the anal angle) and only 4 discal spots (in 1 b, 2, 3 and 6). Hindwing above as in most of the species of *Platylesches* with a yellowish transverse band in the centre behind the cell, hindwing beneath ochreous-yellow with a yellow discal band between the costal margin and vein 2, with 4 or 5 blackish, yellow-pupilled dots in the basal part, and a submarginal row of black dots. Fringes dark brown. Ogowe Valley.

*lamba*. **P. lamba** Neave is the only species known in which the transverse band of the hindwing beneath is quite coherent. Southern Congo District.

*amadhu*. **P. amadhu** Mab. (= *heterophyla* Mab.) (79 b) is so closely allied with the two following species that it is difficult to state some solid differences. Hindwing beneath grey, in 1 b blackish, and the light discal spots are distinct and numerous (in 1 c to 6); forewing beneath at the margin lighter violettish-grey. Natal, Transvaal, and British Central Africa. — **batangae** Holl. (79 c), as the figures show, differs so little from *amadhu* that for the present I consider it to be merely a race of it. Cameroon.

*chamaeleon*. **P. chamaeleon** Mab. (79 b) differs from the preceding species by the under surface of the hindwing being blackish with a white discal spot in 1 c and instead of the other discal spots only with grey nebulous spots. Sierra Leone.

*ayresii*. **P. ayresii** Trim. is easily recognized by the hindwing beneath being everywhere (except in 1 b and a part of 1 c) speckled with small, separate, violettish-grey scales. South Africa to Rhodesia, only in the highlands.

*robustus*. **P. robustus** Neave is a strongly built species with short antennae with thick clubs, all the spots on the wings being more or less yellowish. The hyaline spots 3 and 4 of the forewing are only separated by the vein 4 and situate almost straight above each other. The under surface is very characteristic. The ground-colour of both wings is a pure brown, and decorated with light violettish-grey markings; on the forewing only a marginal band from the costal margin to vein 2 (being the broadest in the areas 4 and 5) and a fine marginal line between the vein 2 and the anal angle are violettish-grey; on the hindwing, however, the base, the costal margin as far as vein 8, the proximal margin in 1 a and in the base of 1 b, as well as a very broad marginal band extending as far as the indistinct light discal spots of the areas 1 c to 6, from the costal margin to the centre of area 1 c, are densely covered with violettish-grey scales. Body beneath white. Rhodesia, Mashunaland, Nyassa. — **ertli** Gaede. The author describes this form as follows. „The under surface almost corresponds to that of *robustus*; on the forewing there is no difference whatever, but on the hindwing the discal area in *ertli* is less light, so that the dark speckling is only noticed in the marginal part of the discal area and neither as coarse there as in *robustus*. Expanse of wings: 22 to 24 mm.“ German East Africa: Kigonsera.

*affinissimus*. **P. affinissimus** Strand is compared by the author with *P. depygatus* and *nigricans*, but as the apex of the abdomen is dark, it does not belong to the same group as *nigricans*, but it is probably closely allied with *P. amadhu* and *chamaeleon*. The hindwing beneath is described as follows: „Hindwing beneath in the centre of area 1 c with a purely white, almost quadrangular spot, besides there are only some bluish diffuse patches which may be considered as fragments of the marking of the preceding species (*depygatus*), in the dorsal area there are only traces of a long longitudinal stripe in the basal area; the ground-colour of the hindwing beneath is as dark as that of the forewing and without a violet hue; the veins are dark.“ What is said here about the hindwing beneath, agrees well with MABILLE's figure of *chamaeleon* (79 b). Nyassaland.



15. Genus: **Galerga** Mab.

„The antennae are not half as long as the forewing; club oviform with a short tip turned down in an obtuse angle. Palpi porrect, bristly; the third joint is pointed, bare, slantingly porrect. Forewing: margin from the apex to vein 4 slanting, then in the opposite direction obliquely directed as far as the anal angle; vein 5 bent at its base and somewhat nearer at 4 than at 6; vein 3 near the anal angle and 2 from the centre of the cell. Hindwing: vein 2 rises outside of the centre of the cell and 3 close at the anal angle; 5 distinct. Hind tibiae with 4 spurs. The ♂ is without sexual distinctions.“ According to MABILLE. The only species of this genus has remained unknown to me.

**G. hyposticta** Mab. „Wings reddish black or with a slight purple lustre. Forewing with three small white subapical dots in a slanting line; in the centre three small reddish discal dots in 1 b to 3, that in 3 being very small or absent. Hindwing without markings and with equally coloured fringes. Forewing beneath dark brown, at the costal margin and apex reddish; a purely white spot at the costal margin at the centre of the cell and after it a row of 5 white spots, including the subapical dots of the upper surface; from the apex extends a row of violettish-grey spots; areas 1 a and 1 b grey; hindwing beneath with two violettish-grey transverse bands, one at the margin and one in the centre, between these bands and at the costal margin black; in area 6 two red spots.“ Madagascar. *hyposticta*.

16. Genus: **Ceratrachia** Btlr.

The morphological marks of this genus are very insignificant. Antennal club long and thin with a long tip. Last palpal joint short and small, hidden by the scales of the second joint. Distal margin of forewing shorter than the anal margin. Vein 2 of the forewing rises much nearer at 3 than at the base of the wing. Vein 5 of the hindwing feebly developed particularly inwards. Hind tibiae with 4 spurs.

The species, however, are at once recognizable by the uncommon arrangement of the discal spots on both wings. These spots (often only occurring beneath) are nearing the margin and are at least in area 5 much nearer at the margin than at the apex of the discal cell; the areas 8 to 10 of the forewing generally show distinct discal spots near the costal margin. In addition all or at least some discal spots show lustrous silvery pupils.

## Review of the Species.

- A. Hindwing above uni-coloured blackish without spots or dots; beneath with a white ground-colour and dark marginal band.
  - α. Forewing on both sides with white dots. The dark marginal band of the hindwing beneath at the proximal margin with silvery white, dark-ringed dots.
    - \*. The dark marginal band of the hindwing beneath ends pointed near the anal angle and is deeply indented in the centre (at vein 5). *C. nothus*.
    - \*\*. The dark marginal band of the hindwing beneath ends broad and transverse at vein 2 and is feebly convex towards the base. *C. ialemia*.
  - β. Forewing on both sides without white dots. *C. brunnea*.
- B. Hindwing above with a large yellow area or almost entirely yellow.
  - α. The discal dot in area 7 of the forewing beneath is (in case it be present) situate close at the apex of the wing and much nearer at the margin than the discal dot in 6.
    - \*. Forewing above monotonously black with or without small white discal dots, and with one small white hyaline dot at most in the discal cell. *C. phocion*.
    - \*\*. Forewing above in the basal part light yellow or at least in the centre with a yellow transverse band, rarely in the ♀ almost uni-coloured black, but invariably with a yellow spot in the discal cell at least on the under surface. *C. flava*.
  - β. The discal dot in area 7 of the forewing is far remote from the apex of the wing and nearer at the discal cell than the discal spot in 6.
    - \*. Forewing beneath for the greatest part with a yellow ground-colour, only at the anal margin, in 1 a, at the base and near the anal angle covered with blackish-brown. *C. argyrosticta*.
    - \*\*. The whole under surface of the forewing is blackish-brown with the usual yellow or white spots. *C. aurea*.

The species of *Ceratrachia* can be divided into two easily discernible groups. In the first group which may be called the *Phocion*-group, the discal dot 7 of the forewing is situate near the apex of the wing, much nearer at the margin than the discal spot in 6, and it is placed with the dots in 8, 9, 10 in an almost straight line running nearly parallel to the costal margin.

— In the second group, the *Argyrosticta*-group, the discal dot 7 of the forewing is much farther remote from the margin than that in 6.

### Phocion-Group.

- nothus*. **C. nothus** *F.* (= *enantia Karsch*) (78 i, 79 g). Both wings above with a blackish-brown ground-colour, the forewing with distinct white dots, the hindwing without markings. Forewing beneath almost as above; hindwing beneath white with a dark marginal band and small black, partly silvery-pupilled dots or spots. Their arrangement is to be seen from the figures. West Africa.
- ialemia*. **C. ialemia** *Druce* only differs from *nothus* by the marks stated in the review. Cameroon.
- brunnea*. **C. brunnea** *B.-Bak.* is evidently closely allied with the two preceding, but known to me only from the description. „Both wings monotonously dark umber-brown, without markings. Under surface: hindwing white, at the margin tinted olive-brown; costal margin as far as vein 8 brown; a very large brown spot covers the whole margin, and is proximally bent, whereby the white part is distally emarginated in the shape of a crescent; the brown marginal band is indented at vein 4 and ends at vein 2; in the white area there is a dark spot at vein 8 with two slanting dots before them and two small spots below vein 2. Expanse of wings: 34 mm.“ Nandi.
- phocion*. **C. phocion** *F.* (79 g). With respect to the sexes and their variability and to the following species there prevails great confusion which can only be reduced to order by breeding and observations in nature. According to HOLLAND (1920), *argyrosticta* Plötz would be the ♀ of *phocion*. REBEL, however, probably by rights (see below) considers *argyrosticta* to be a distinct species. Another difficulty is that some ♀♀ which were described as female forms of *flava* and its races, can hardly be distinguished from typical *phocion*. I do not dare to decide whether the difference between *phocion* and *flava* having been stated in the review can stand the test. JOICEY and TALBOT who had a very great material before them, report (1921) that they were unable to decide which ♀♀ belonged to *phocion* and which to *flava*. — ♂ and ♀: forewing above blackish-brown unicoloured without white dots (♂) or with some small white dots in 4 to 8, rarely also with one similar dot each in 2, 3, and the discal cell (♂, ♀); beneath the dots are generally more complete, and the dot in the costal angle of the discal cell is almost invariably distinct, at the costal margin and in the apical part there occurs sometimes brownish-yellow dusting. Hindwing above lighter or darker yellow, at the base and at the costal margin as far as vein 5 or 6 blackish-brown, at the proximal margin rarely longer than to the centre darkened; no dots or spots at all; the under surface is quite light yellow with small, silvery white dots, which are more or less bordered by brown scales and which are rarely quite absent (a separate form?) and sometimes (in the ♀) with a fine dark line at the costal margin and a small dark spot at the costal angle; fringes yellow, at the apex of the wing sometimes brown. Sierra Leone to the Congo District.
- extensa*. **C. flava**. The ♂♂ of this species are at once recognized by the bright yellow, spotless basal half of the forewing above. The extent of this yellow colour and in connection with it the width of the black marginal band vary, however, a great deal. The hindwing is in all the races above yellow without spots or only with small dark marginal dots at the ends of the veins, and with a narrow dark apical spot which is rarely extended a little along the costal margin. — **extensa** *form. nov.* ♂. The yellow colour of the forewing above between the base and the blackish-brown marginal band entirely reaches the costal margin and also covers the basal half of the areas 4 to 6; the marginal band is thereby only about 3 mm broad in these areas, and only in the areas 7 to 9 it is somewhat extended towards the base. At the base there is only a short black streak following vein 12. The lightest form of the ♂. Cameroon. — **flava** *Hew.* (= *charita* Plötz) (79 g). ♂. The yellow colour of the forewing above reaches to the costal margin, but not to the base of the areas 4 to 6, which are covered by the marginal band and exhibit a small yellow spot at most in area 5. The dark marginal band is almost equally broad between the anal margin and vein 4. Cameroon to Congo. — **wollastoni** *Heron* ♂ is very closely allied to *flava* and only differs by the dark marginal band on the forewing above being on the inside almost rectilinearly defined from the anal angle to the centre of the costal margin and leaving free only a very small yellow spot in the base of area 3. On the under surface the marginal band is almost similarly developed, but lighter, more brown. Ruwenzori and in the Congo District. — **semlikensis** *Joic. & Talb.* (= *flava* Rebel 1914). The ♂ differs from the preceding by the forewing above showing a black costal-marginal band extending from the base to the marginal band and reaching to the discal cell. The marginal band is still broader than in *wollastoni* and seems also to cover the base of area 3; the base is also more broadly covered with black. To the north of Lake Tanganyika and in the Semliki Valley. — As the ♀♀ of these ♂ forms probably belong the following: **fasciata** *Auriv.* Forewing above blackish-brown, in the centre with an irregular yellow transverse band composed of 4 spots (an indistinct transverse spot in 1 b, a larger one in 2, a spot right across the apex of the discal cell, and a dot in 10); besides there is a minute yellow spot in 3, and small white dots are in 6 and 7, the latter near the apex of the wing. Forewing beneath at the costal margin very broad light yellow; the yellow median transverse band is almost as above and in front united with the costal-marginal band; close in front of the margin, between the costal margin and vein 3, extends a brownish-



yellow band; the white dots are in black rings, more distinct than above and occur in the areas 4 to 9 or 10. Hindwing above orange, at the costal margin broad black, and with a dark stripe at the proximal margin from the base to beyond the centre. The under surface is marked almost as in the ♂♂. Cameroon. REBEL describes and figures a ♀ as the ♀ of *flava*, which is very much like *fasciata* and seems only to differ by the yellow transverse band of the forewing being a little narrower and the dark costal-marginal and distal-marginal band on the hindwing above being still broader. Central Africa. The ♀ of *semlikensis* figured by Joicey and Talbot is still darker by the entire absence of the yellow transverse band on the forewing, the forewing being thus above uni-coloured black with 1 to 3 white subapical spots. Semliki Valley. A fourth female form is considered by HERON to be the ♀ of *wollastoni*; it closely approximates *C. phocion*; forewing above uni-coloured blackish-brown without a yellow median transverse band, but instead of it with a small, yellowish, separate spot in 2 and a similar spot in the posterior angle of the discal cell; besides the usual small white dots are before the apex, and the forewing beneath is entirely coloured and marked as above. Hindwing almost as in *phocion* beneath, but at the costal margin broadly coloured dark grey. Ruwenzori. Hereto probably also belongs *tessmanniana* Strand. „Very similar to *C. wollastoni* Heron ♀, the upper surface differing from that of *wollastoni*, *tessmanniana* judging from the figure, only by the four subapical dots of the forewing being of a pure white, and the two posterior spots of the three discal spots being only indistinctly or not at all remote from each other.“ „On the hindwing beneath the dark dusting of the costal area of *wollastoni* is absent here, and small black marginal spots are present. The forewing beneath is distinguished by a yellow costal area being in the terminal half striated black; in the marginal area the yellow colouring extends as a narrow band hindwards to vein 3, but the distal margin and costal margin of the wing remain black. Corresponding to the discal spots above, the under surface exhibits a yellow transverse band interrupted by the darker veins and posteriorly angularly curved. The subapical dots in the yellow area are situate in black, more or less elongate spots and are therefore rather distinctly prominent. The anal margin of the forewing is light greyish. Expanse of wings: 25½ mm.“ South Cameroon. The description of the under surface agrees very well with that of *fasciata*, and *tessmanniana* seems to be an intermediate form between *fasciata* and „*wollastoni*-♀“.

**C. indeterminabilis** Strand. The following may be mentioned from the description: „Forewing dull black with 4 small white punctiform spots forming an oblique row being slightly bent convex towards the margin, from the centre of the anal margin to area 6, where it is 4 mm distant from the apex of the wing; the hindmost of these spots is the largest, triangular, somewhat yellowish, and is situate on the anterior side of vein 1 b, then follows a spot in area 2, appearing as a transverse band between the veins 2 and 3, whilst the spot between 3 and 4 is almost circular, which is also the case with the spot in area 6; before the latter spot, a little farther towards the base, there are two small, white spots close together, forming a transverse row vertically directed to the costal margin. Moreover there is a white punctiform spot in the cell, very near at the costal margin, but remote from the discocellular. Fringes black, but with a slight greyish reflection; the surface of the wing shows single greenish-yellow scales in the costal area, and in the dorsal area not far from the base a greenish-yellow longitudinal spot. Hindwing of a bright light yellow, but the costal area as far as vein 5 black, the costal margin narrow yellowish; the yellow part encloses in the basal area two blackish longitudinal patches which may sometimes be confluent. Forewing beneath black, the apex and a narrow longitudinal band at the base of the costal area are yellow, but the apical area is very scantily scaled yellow. Hindwing beneath yellow, but paler yellow than above, in the centre with a subtriangular black spot and midway between this spot and the anal margin with a subsquare black spot. Besides there is a black sublimbal spot in area 1 b, and in the areas 2 to 4 there may be smaller black spots anteriorly decreasing in size. Moreover there are two small, indistinct, black, antemedian transverse streaks in the cell, some submedian similar ones and a postmedian transverse row of such streaks between the larger spots. Body above black, scantily strewn with greenish-yellow scales, beneath yellow. Legs yellow with darker tarsi. Expanse of wings: 26½ mm.“ South Cameroon. In its exterior this species must be very similar to *C. phocion*, but as the position of the discal dot 7 of the forewing is not quite clear, I cannot decide for certain whether the species belongs to the *Phocion*-group or to the following.

#### Argyrosticta-Group.

**C. argyrosticta** Plötz (79 f). Forewing above black, in the basal part with three yellow, not transparent longitudinal stripes, a broad one at the costal margin, a narrow one in the discal cell, and a broad one being sometimes spot-shaped in area 1 b, to which the base sometimes does not quite reach, and in the centre with 7 light yellow hyaline spots almost arranged in a circle, two oblong ones of which are in the discal cell, a larger one in 2 and one each in 3, 4, 6, and 7; on the under surface these spots are still more distinct, encircled with black, and in the areas 4, 6, and 7 outside with a lustrous silvery pupil, and besides there are dots with silvery pupils in the areas 5, 8, 9 and 10. Hindwing on both sides almost exactly coloured and marked as in *C. aurea*-♂ (79 f). The ♀ is unknown to me. Cameroon to Mawambi in Central Congo.

*aurea*. **C. aurea** Ham. Druce (79 f, g) is very similar to the preceding and chiefly only differs by the dark under surface and the somewhat smaller spots of the forewing. In the ♀ the spots of the forewing are white instead of yellow. Congo District: Kassai.

*hollandi*. **C. hollandi** B.-Bak. is unknown to me, but it evidently belongs to this group. The description says: „♂ forewing blackish with a small spot at the end of the discal cell; two smaller ones behind each other near the apex behind the veins 8 and 7, a dot behind vein 6 nearer at the margin, another one nearer at the base behind 5, and one more behind 4 more proximad; on the hindwing the base and the costal margin as far as vein 6 and the margin blackish; the other parts lemon-coloured, at the margin faintly orange. Under surface: forewing blackish, yellowish along the costal margin and in the apical part; all the spots of the upper surface are present and encircled with black; hindwing lemon-coloured with a narrow brown costal margin and a brown spot at the apex; a brown dot at the apex of the discal cell, with a brown spot on each side (in front and behind); two dots on the basal side of the apical spot; a spot in the centre of the fold and a dot in area 2 near the margin; nearly all the spots are pupilled yellow. Expanse of wings: 38 mm.“ Toro: Fort Portal.

### 17. Gattung: **Xanthodisca** gen. nov.

The forms of this genus have hitherto been ranged among the genus *Pardaleodes*. But in order to be able to define this genus, I was forced to establish a new genus for it. All the forms are very closely allied and differ from *Pardaleodes* also by the shape, colour and marking of the wings. In the structure of the veins they are distinguished by vein 2 of the forewing rising far before the centre of the cell. Hind tibiae with 4 spurs. Antennae long, projecting far beyond the centre of the forewing, antennal club elongate with a moderately long tip. Last palpal joint short, conical, little projecting. Vein 2 of the forewing rises near the base of the wing, 4 almost in the centre between 3 and 5, 11 is well separated from 12. Vein 5 of the hindwing is distinct. Forewing short, triangular, with an almost straight margin. Hindwing above uni-coloured black without markings. Forewing black with a large orange or reddish discal area.

*vibius*. **X. vibius** Hew. (79 f). The large yellow discal area of the forewing neither reaches to the costal margin nor to the anal margin and is posteriorly defined by the vein 1; it consists of a long triangular spot filling up almost the whole discal cell, a similar though smaller spot in 3 covering the whole basal half of area 3, a long rectangular spot in 2 extending just as far towards the margin as the spot in 3, but not quite reaching to the base of area 2, and of an almost just as large spot in 1 b. The base of area 2 is in the ♂ filled up by a blackish-grey mealy spot, and behind the base of vein 1 there is a similar black mealy streak. Gabun to Ruwenzori and the Rutchuru-plains. ♀ unknown to me. — *rega* Mab. is described as follows: „Forewing black, in the centre reddish-yellow; the black colour on all the margins forms a regular marginal band despatching below the apex a square black spot which separates three apical yellow spots; a small, elongate, black spot at the base. Hindwing black with a greyish-yellow lighter part between the veins. Under surface similar though lighter. Hindwing between the veins with a bent yellowish transverse band which is more distinct than above. Body above blackish. Abdomen and palpi yellowish. Sierra Leone.“ This form seems only to differ from *vibius* by the small yellow preapical spots on the forewing and the row of spots on the hindwing. — *sierrae* Holl. (79 f) is an insignificant form of *rega* only different by the large yellow discal spot of the forewing reaching to the anal margin. Hindwing with or without spots. Sierra Leone.

### 18. Gattung: **Pardaleodes** Btlr.

Antennae long, projecting beyond the apex of the discal cell of the forewing, the moderately long tip turned down. Third palpal joint short, slightly projecting beyond the bristles of the second joint. Margin of forewing distinctly bent. Vein 2 of the forewing rising at or behind the centre of the cell, vein 11 is bent towards vein 12. Vein 3 of the hindwing from the posterior angle of the discal cell, vein 5 distinct, midway between 4 and 6. Hind tibiae with 4 spurs.

Wings above black with yellow areas or spots. Hindwing sometimes above without markings. The species can be divided into two groups, the first of which is very similar to *Xanthodisca* by the marking, but it shows the very same structure of the veins as *Pardaleodes*.

#### Review of the Species.

A. Hindwing above uni-coloured black without distinct markings.

1. Forewing above with a broad yellowish-red or orange-yellow transverse band reaching or almost reaching to the costal margin. *P. jan.*



2. Forewing above only with small yellow spots.

*P. idis*.

B. Hindwing above with a yellow spot in the discal cell and a large yellow area outside of the discal cell, both sometimes united with each other, so that the greatest part of the hindwing above turns yellow.

α. Hindwing above in the discal cell with a small yellow spot which is entirely or almost entirely separated from the large yellow discal area.

\*. Discal spots of the forewing all or nearly all transparent, light yellow.

1. The yellow discal spot in 1 b of the forewing is oblong and almost exactly as long as the hyaline spot in 2; the discal spots 4 and 5 are quadrangular and contiguous, generally not transparent; the discal spots 6 to 8 are oblong.

*P. edipus*.

2. The yellow discal spot in 1 b of the forewing is transverse, much shorter than the hyaline spot in 2; discal spots 4 and 5 punctiform, separate, transparent; discal spots 6 to 8 small, punctiform.

*P. sator*.

Cf. also *reichenowi*-♀.

\*\*. All the spots of the forewing above yellow or orange-yellow, not transparent.

1. Forewing above with large, mostly united, yellow spots. The discal area of the hindwing above is large, rounded off, and in the areas 3 to 5 it almost reaches to the margin.

*P. incerta*.

2. Forewing above with smaller, orange-yellow spots. The discal spot of the hindwing above, between the veins 2 and 6, forms an almost equally broad (about 2 mm) transverse band, which is everywhere broadly separated from the margin.

*P. herilus*.

β. Hindwing above for the greatest part yellow, only at the costal margin, base, and proximal margin coloured black, rarely as far as the apex of the discal cell black, in the latter case, however, without a yellow spot in the discal cell.

\*. The yellow spot or double spot in the apex of the cell on the forewing is not connected with the base of the wing by fine yellow longitudinal streaks. The discal spots 6 to 8 of the forewing are as usually small, punctiform or somewhat oblong, but they never form together an equilateral triangle.

§. Discal spots of the forewing transparent, yellow or rarely whitish.

1. At least the discal spots 1 b to 3 of the forewing above united, only separated by the veins.

*P. reichenowi*.

2. All the discal spots of the forewing small and separated from each other. The light area on the hindwing above reaches quite up to the margin.

*P. bule*.

§§. All the spots of the forewing yellow or brownish-yellow, not transparent.

1. The discal spots 1 b to 3 of the forewing above separated from each other.

*P. xanthopeplus*.

2. The discal spots 1 a to 3 of the forewing above united into a slanting band (♂) or at least the spots 2 and 3 contiguous.

*P. ariel*.

\*\*. The yellow spot in the apex of the cell of the forewing is connected with the base of the wing by two yellow longitudinal streaks. The discal spots 6 to 8 of the forewing together form an almost equilateral triangle, the spot in 6 being long, that in 7 shorter, and that in 8 punctiform.

*P. asirape*.

**P. fan** *Holl.* entirely agrees with *Pardaleodes* in the structure of the veins, whereas in the colouring *fan*. and marking it agrees with the forms of the preceding genus. Wings above jet-black; forewing in the centre with a reddish-yellow transverse band of about 6 mm width from the costal margin to vein 1; it is composed of oblong spots, only separated by the likewise yellow veins, in 1 b, 2, 3, 9 to 12 and in the discal cell, the spot in 12 does not quite reach to the costal margin, but leaves a fine line of the ground-colour blank. Hindwing above uni-coloured without markings, beneath with indistinct angular black spots on a somewhat lighter ground. In the typical form the black apical part of the forewing above is not marked, but beneath it shows three minute white dots, one in 4 and one each in 7 and 8. South Cameroon. — **kamagamba** *B.-Bak. kamagamba*. seems only to differ by the forewing above showing yellow discal dots in 4, 5, 7 and 8. Kamagambo. — **scalaris** *Grünb.* „The two light subapical spots below the costa (costal margin) of the forewing, and the small submarginal spot in area 4, which are confined to the under surface in *P. fan*, are here also present above; the submarginal spot is orange-yellow like the median band, the two anterior small spots are whitish-yellow. On the under surface all of them are whitish-yellow. The broad yellow median band, being rather vertical in *fan*, is here obliquely pointing distally; the proximal border-line runs almost rectilinearly from the costal margin a little before the end of the first third to the centre of the posterior margin; the distal margin is removed outwards on vein 4 and extends from here vertically to vein 1 with a slight distal convexity.“ Expanse of wings: 29½ mm. Sesse Islands; Ruwenzori; Rutchuru plains.

**P. edipus** *Cr.* (79 c) is easily determinable from the review of the species and the figures. Sierra Leone *edipus*. to Cameroon.



- sator*. **P. sator** *Dbl. & Hew.* (= *pusiella Mab.*) (79 d) is very similar to *edipus*, and was formerly taken to be the ♀ of it. There are, however, ♂♂ and ♀♀ of both species before me. By the marks stated in the review of the species, *sator* is at once discernible from *edipus*. Ashanti to Congo.
- incerta*. **P. incerta** *Snell.* (= *diluta Robbe*, *murcia Plötz*) (79 e) is particularly distinguished by the much larger and thereby united, not hyaline yellow spots of the forewing above; thereby two black longitudinal streaks in the basal part of the areas 4 and 5 are generally completely separated from the black marginal band and often also from the costal margin. Congo District as far as Ruwenzori and the Rutshuru plains.
- herilus*. **P. herilus** *Hopff.* (79 e). The spots above are deeper yellow and smaller than in the preceding, and the spots of the discal cell are separated from the others. Portuguese and German East Africa.
- reichenowi*. **P. reichenowi** *Plötz* (= *festus Mab.*) (79 e) is in the male recognizable by the large, unbroken, yellow area on the hindwing above reaching the margin at least in 1 e, but otherwise it is very similar to *P. sator* (79 d). The ♀, however, is so very much like that of *sator*, that it seems only to differ by its larger size. —
- torensis*. **torensis** *B.-Bak.* „Both wings dark brown with remarkable orange-yellow areas; forewing at the base brown, in the centre as far as vein 1 orange-yellow, into which the brown colour penetrates at the end of the discal cell and at the costal margin; the discal cell at the end with two, almost oval, yellowish, transparent spots; the basal half of the areas 2 and 3 yellowish and transparent, so that the latter spot extends longer towards the margin than the former, above the spot in 3 a small orange-yellow spot; a larger orange-yellow spot is nearer to the costal margin and nearer to the discal cell. Hindwing between the veins 2 and 6 light orange, which colour also penetrates a little into area 1 e; margin narrow brown. Expanse of wings: 39 mm.“ „This
- aurivillii*. form may be the eastern race of *P. reichenowi*.“ East Africa: Toro. — **aurivillii** *Reuss.* „Forewing dark brown, at the base dusted with a greenish yellow. The centre of the wing is crossed by a broad orange band which appears semi-transparent in the central areas between the veins, whereas at the costal margin and in area 1 b it is normally pigmented; near the base there is in 1 b a small, normally pigmented orange-yellow spot, and in the apical area there are three more small, semi-transparent spots; fringes brown. Hindwing brown like the forewing, along the proximal margin with yellow hair; between the narrow brown marginal line and the discal cell there is, between the veins 1 b and 6, a large orange spot which is crescentiformly indented before the anal angle, and within the discal cell there is beside it another small orange spot; fringes orange-yellow. Under surface: the forewing exhibits a lighter reproduction of the marking and colouring above, but the costal margin and apical area as well as the distal margin as far as down to vein 2 are dusted with yellow; a chain of small brown marginal lunae follows the margin as far as vein 2, and the apical spots are of a whitish lustre; the fringes are yellow instead of brownish. Hindwing brown, but so intensely dusted with yellow that the brown colour appears more as a marking. Between the proximal margin being of a pure yellow in its whole length, and the discal cell there remains a brown patch in which two pairs of oblong silvery spots are conspicuous, and a brown cloud is in the distal angle with a small silvery spot at the inner border below vein 6. A chain of brown marginal lunae follows the distal margin as far as vein 2, between the latter and vein 1 b there is a larger crescentiform spot a little more remote from the margin, followed by the above-mentioned silvery spots in the brown area towards the base. Between the marginal lunae and the discal cell, though somewhat nearer to the margin, a chain of small brown spots extends to vein 2, and two brown ring-spots in the yellow ground below the costal margin being bordered with brown and finely with yellow indicate the ends of two more brown transverse bands, the first of which is in the centre of the wing as a brown line connecting the two above-mentioned brown patches in the shape of a Z, looking from the proximal margin or costal margin, whilst the second part is the discal cell and bends as a brown line distalwards at the upper vein (ODC), bordering it as far as vein 4. The yellow area of the discal cell being thus encompassed shows a faint silvery lustre. Fringes yellow. Abdomen brown, with yellow hair. Antennae above brown, below lighter, yellowish. North Cameroon.“ The differences between this form and *P. reichenowi* have not been mentioned, and I cannot make out from the description in what way the two forms can be kept asunder. The hindwing beneath, however, seems to show somewhat more variegated and distinct markings.
- bule*. **P. bule** *Holl.* (= *makala B.-Bak.*) (79 d, e). The figures and the description in the review are sufficient for recognizing the two sexes of this species. Cameroon to Central Congo and the Rutshuru plains.
- xanthoepus*. **P. xanthoepus** *Holl.* (79 e). It also suffices to refer to the figures and the review of the species. French Congo, in the Ogowe Valley.
- ariel*. **P. ariel** *Mab.* I have not been able to examine this species and therefore do not know whether it agrees with *Pardaleodes* in the structure of the veins. In the marking of the forewing above it almost entirely corresponds with *P. herilus* (79 e), but it differs by the much greater extent of the yellow colour on the hindwing above not forming a narrow transverse band as in *herilus*, but being more (♂) or less rounded off. The hindwing beneath is lighter yellow with few black, sharply defined dots. In the ♀ the yellow discal area of the hindwing above is in 1 e interrupted by a black longitudinal ray. Madagascar.



**P. idis** *Oberth.* Wings above blackish-brown; hindwing without markings; forewing with two yellow *idis.* spots in the apex of the discal cell and with moderately large yellow discal spots in 1 b, 2, 3, 6, 7 and 8; the discal spots 2 and 3 are broadly separated from the spot of the discal cell, but they touch each other the spot 2 being situate almost in the centre of area 2, and the spot 3 not covering the base of its area; in area 1 b faint traces of an anterior yellow spot. Forewing beneath spotted as above, but at the costal margin as far as the discal cell, at the apex as far as vein 5 and at the distal margin as far as vein 2 covered with yellowish-brown. Hindwing beneath greyish-yellow with traces of a somewhat lighter longitudinal stripe through the discal cell and the area 5 as far as the margin, and with some minute blackish dots or striae, one each in the discal cell, at the base of area 7 and behind the centre in 2 to 7. This species in the marking so closely resembles certain species of the genus *Ampittia* (such as *mirza*, *cariate*, and *bernieri*) that it can easily be mixed up with them. But as vein 5 of the forewing is at its base distinctly bent towards vein 4 and the antennal club is long, thin and with a long point, I place it to *Pardaleodes* near *P. ariel*. Madagascar.

**P. astrape** *Holl.* (= *parcus* *Karsch*) (79 e), as the figure shows, differs from the other species by the *astrape.* yellow longitudinal rays at the anterior and posterior edges of the discal cell and by the uncommon shape of the subapical spot on the forewing. Togo and Gabun.

### 19. Genus: **Padraona** *Mr.*

The only, sure, Ethiopian species of this genus is very near to the genus *Pardaleodes*, but it differs by vein 11 of the forewing running quite separate from vein 12, and vein 3 almost rising from the posterior angle of the discal cell and far from vein 2; the latter rises from the centre of the cell. Tip of antennal club very sharp but little longer than the club is thick.

**P. zeno** *Trim.* (= *coanza* *Plötz*, *splendens* *Mab.*, *watsoni* *Btlr.*) (79 d). The wings are above blackish- *zeno.* brown with bright yellow markings, the arrangement of which is to be seen from the figure. Particularly remarkable is that the whole discal cell of the forewing is filled up with yellow, that the discal spots 1 a to 3 form a slanting band separated from the discal cell, and that the discal spots 4 and 5 are contiguous and near the margin and the discal spots 6 to 8 are elongate. The ♀ differs by the discal cell of the forewing above being more or less black at the base. South Africa to Angola, and in the whole of East Africa to Mt. Elgon. — **zenides** *Strand* is evidently founded upon a ♀ in which the discal spot 1 b of the forewing is *zenides.* divided into two spots. Quite similar ♀♀ are also before me from East Africa. Congo, in the Sassa District.

**P. ? colastus** *Plötz* is unknown to me, but *HOLLAND* ranged it as a questionable species of *Padraona*. *colastus.* *PLÖTZ* places the species to *Apauustus* and describes it as follows: „blackish-brown with reddish-yellow marking, only at the anal angle of the hindwing the fringes are yellow. Body and bases of the wings above densely clothed with ochreous-yellow hair. A narrow reddish-yellow oblique band is narrowed in cell 1 and extends in the forewing from veins 1 to 4, in the cells 4 and 5 there appear towards the margin only feebly dusted spots, the cells 6 to 8 show pointed spots. The costal margin is half reddish-yellow, to the same extent also the discal cell, in the latter there is besides a brown ray. The hindwing shows a reddish-yellow band somewhat narrowed in the cell 1 c, extending from 1 to 6. The ♂ forewing shows a grey mark extending close in front of the yellow band parallel to it, forming minute lunae in the cells 1 to 3. Abdomen and palpi below yellow. Length of forewing: 16 mm. Delagoa Bay.“

### 20. Genus: **Parnara** *Mr.*

Antennae rather short than long, not or hardly reaching to the apex of the discal cell of the forewing; the reverted antennal tip is not or but little longer than the diameter of the club. Third palpal joint short and obtuse, rarely projecting from the clothing of the second joint. Vein 2 of the forewing rising at or behind the centre of the cell, vein 5 near 4, and vein 11 is not bent up towards vein 12. Vein 5 of the hindwing distinct, though feebler than the others, 2, 3 and 4 close together. Hind tibiae with 4 spurs.

The numerous species are all above dark brown or rarely yellowish-brown, with or without light spots, and can often only be distinguished by the number and position of these spots. As these spots do not always occur constantly and are sometimes differently developed in the sexes of the same species, it is difficult to separate the species in a distinct way by indefeasible marks. The following review may therefore be regarded mere y as a preliminary attempt.

#### Review of the Species.

I. Head above uni-coloured without light spots or dots.

A. Discal cell of forewing above uni-coloured without spots or at most with a small hyaline spot at the costal margin opposite vein 10.

α. Forewing above at least with 2 or 3 light hyaline spots (in 2 to 4).

\*. Both wings above from the base almost to the margin densely clothed with brownish-yellow scales. Discal cell of forewing without spots.

1. Discal spots of forewing above yellow or orange-yellow, not transparent, only present in 2 and 3 or also marked in 6 to 8. Forewing beneath at the posterior margin and hindwing above at the costal margin broadly blackish. Hindwing generally on both sides with 4 or 5 small, indistinctly defined, yellow dots. *P. micans*.

2. Discal spots of forewing white and transparent, in (1 b) 2 to 4, 6 to 8 present and distinct. Hindwing with 2 to 5 yellow punctiform spots. *P. auritincta*.

\*\*. Both wings above dark brown or blackish-brown without brownish-yellow scales, but in the basal part often clothed with greenish or brown hair.

+. Forewing above without a light hyaline spot in the discal cell.

o. Forewing above with a discal spot in area 1 b.

-. Hindwing above in the centre between the veins 1 b and 6 with a transverse band of white hyaline spots. *P. melphis*.

--. Hindwing above without hyaline spots.

1. Discal spot 1 b of the forewing above white and transparent.

a. Under surface of both wings monotonously brown or blackish-brown without distinct yellow scales.

a'. Smaller, 28 to 30 mm. Forewing beneath at the posterior margin somewhat lighter. Hindwing beneath dark blackish-brown with or without traces of a still darker submarginal band. *P. alberti* ♀.

b'. Larger, 35 to 37 mm. Forewing beneath at the posterior margin darkened, blackish. Hindwing beneath dark brown with 3 or 4 light (black-ringed) discal dots in 2, 3 (5) and 6.

a''. Hindwing beneath in the centre at the cell-end lighter grey.

*P. fatuella*.

b''. Hindwing beneath of a monotonous brown. *P. caffraria* ♀.

b. Wings beneath of a bright red-brown; forewing beneath at the posterior margin broad black. *P. ferruginea*.

2. Discal spot 1 b of the forewing above not transparent and yellowish. Under surface of forewing along the costal margin and of the hindwing almost entirely densely clothed with large, oblong, yellow scales; hindwing besides with white, black-ringed discal dots in 2, 3, (4, 5) and 6. *P. borbonica*.

oo. Forewing above without a discal spot in area 1 b, but invariably with hyaline spots in 2 and 3.

-. Hindwing above uni-coloured without dots or spots.

Λ. Forewing above with three distinct subapical hyaline dots in the areas 6 to 8, of which that in 7 is always situate nearer to the base than the others.

†. Forewing beneath at the posterior margin just as dark or darker than at the costal margin.

1. Hindwing beneath in the centre at the end of the cell lighter grey; the indistinctly defined grey area is formed by large grey scales; besides with 3 or 4 light, dark-ringed discal dots in 2, 3 (4, 5) and 6.

*P. fatuella*.

2. Hindwing beneath dark blackish-brown or dark grey without a lighter part in the centre.

a. Larger species, 34 to 35 mm.

*P. caffraria* ♂.

*P. maranga* ♀.

b. Smaller species, about 30 mm.

*P. ursula* ♀.

††. Forewing beneath at the posterior margin distinctly lighter grey.

1. Hindwing beneath with a dark submarginal band. *P. lugens* ♀.

2. Hindwing beneath monotonously dark brown without markings.

*P. alberti* ♂.

*P. entebba*.

? *P. xylos*.

ΛΛ. Forewing above without subapical hyaline dots or only with 1 or 2 such dots in 6 and 7, or only in 6.



1. Forewing beneath at the costal margin, apex and distal margin, and hindwing beneath almost entirely densely clothed with yellow or ferruginous-brown scales.
  - a. Sealing beneath yellow. *P. pontieri.*
  - b. Sealing beneath ferruginous-yellow or red-brown. *P. morella.*  
*P. marchalii.*
2. Both wings beneath with an ash-grey ground-colour.
  - a. Hindwing beneath in the centre marked dark.
    - a'. Hindwing beneath in the centre with a dark transverse band.  
Expanse of wings: 26 to 27 mm. *P. havei.*
    - b'. Hindwing beneath in the centre with an anteriorly rectangularly broken transverse row of dark, sometimes light-pupilled dots.  
Expanse of wings: about 35 mm. *P. aures.*
  - b. Hindwing beneath without dark markings, but with 3 small white dots. *P. cana.*
- -. Hindwing above with 1 to 5 light dots. *P. albigutta.*  
*P. anelia.*  
? *P. neoba.*
- + +. Forewing above in the discal cell at the costal margin, opposite vein 10, with a small white hyaline spot.
  - o. Forewing above with a discal spot in area 1 b.
    - †. Palpi below whitish or light grey.
      - . Hindwing above without any marking.
        1. Forewing above with 3 subapical dots (in 6 to 8). Hindwing beneath with 3 discal dots (in 2, 3 and 6).
          - a. Forewing beneath at the costal margin and apex, hindwing almost entirely clothed with large yellowish scales. *P. borbonica* var. *senegalensis.*
          - b. Both wings beneath with a grey ground-colour. *P. gemella.*  
? *P. aequalis.*
        2. Forewing above only with one subapical dot (in 6). Hindwing beneath with 6 brown, white-pupilled discal dots in 2 to 6. *P. holtzi.*
      - -. Hindwing above at least with traces of light discal dots; beneath they are always distinct.
        1. Wings above beginning from the base with long, ochreous-yellow hairing forming on the forewing three longitudinal stripes (at the posterior margin, along the median in 1 b, and at the costal margin) and clothing the hindwing far beyond the centre. *P. detecta.*
        2. Wings above at the base with brown or greenish-brown hair. *P. gemina.*  
*P. perobscura.*  
*P. chambezi* ♀.
  - ††. Palpi blackish, without white scales, discal spot 1 b of the forewing small and narrow or absent; that in 2 large and square. Hindwing on both sides without discal dots. *P. punctata.*
  - oo. Forewing above without a discal spot in area 1 b.
    - . Hindwing above without dots or spots. *P. caesia.*  
*P. aequalis.*
    - -. Hindwing above with distinct light discal dots, which are beneath distally bordered with black.
      1. Wings beneath with a ferruginous-yellow or ferruginous-brown ground-colour, palpi below light yellowish. *P. subochracea.*  
*P. chambezi.*
      2. Wings beneath with a dark grey ground-colour and greenish-yellow dusting. *P. monasi.*

β. Wings above uni-coloured dark brown or blackish-brown without hyaline spots or other markings.

\*. Fringes of hindwings white or whitish.

*P. palocampta*.

*P. maranga* ♂.

\*\*. Fringes of hindwings coloured like the margin or dark grey.

o. Hindwing above from the base to far beyond the centre densely clothed with yellowish-brown hair; the hairy part therefore distinctly contrasts with the blackish costal and distal margins. Large species, 38 to 39 mm. *P. sinnis*.

oo. Hindwing above in the basal part not clothed with long hair of a colour different from the ground-colour. Smaller species, 26 to 33 mm.

1. Both wings beneath at least with traces of a broad, darker marginal band. *P. lugens* ♂.

2. Wings also beneath without a marking.

a. Larger species, about 33 mm.

*P. noctula*.

b. Smaller species, about 26 to 27 mm.

*P. ursula* ♂.

*P. dolens*.

B. Discal cell of the forewing always with two white hyaline spots, one at the costal margin, opposite vein 10 or 11, and one at the posterior margin, opposite the base of area 2; these spots are nearer at the base than the spot in area 2; the two cellular spots are sometimes united into a transverse spot.

α. Hindwing above without markings or with some light discal dots not being united into a band.

\*. Hindwing above without a white spot at the end of the discal cell.

§. Hindwing beneath with a monotonous ground-colour.

+. Ground-colour of the hindwing beneath greyish-brown, yellowish-brown, or yellowish-grey, with or without light discal dots.

Λ. The white spots in the discal cell of the forewing are separate.

o. Forewing above with 3 white subapical discal dots (in 6 to 8).

1. Forewing above in area 1 b in the ♂ with a blackish mealy spot, which is parted by a fine, white, slanting line, and in the ♀ with two yellowish, not transparent spots, one of which is larger and at vein 1, while the other, smaller one is generally punctiform and situate at vein 2 behind the discal spot 2. Forewing with discal spots in 2 and 3 and a small discal dot in 4 and sometimes also in 5. *P. mathias*.

2. Forewing above in the ♂ without a mealy spot and with a small white discal spot in area 1 b.

a. Forewing above with a discal spot in 4. Hindwing above with 2 white dots in 4 and 5, beneath without a spot in the discal cell.

*P. fallax*.

b. Forewing above without a discal spot in 4. Hindwing above with two small white spots, one each in 2 and 3, and beneath with a light spot in the discal cell. *P. mabea*.

oo. Forewing only with three white discal dots, one each in 2, 3 and 6.

*P. bauri*.

ΛΛ. The white spots in the discal cell of the forewing are united forming a centrally strangulated transverse spot. Forewing with discal spots in 2 to 4 and subapical dots in 6, 7 (and 8). Hindwing above with two white discal dots.

*P. argyrodes*.

++. Hindwing beneath with a violettish-grey or lustrous violet ground-colour. The spots in the discal cell of the forewing are separate.

1. Hindwing beneath with two transverse rows of whitish spots proximally bordered with black, one before and the other behind the apex of the discal cell. Forewing above with small discal spots in 2 to 4 (or 5) and subapical dots in 6 and 7. Hindwing above without any marking. *P. saxicola*.

2. Hindwing beneath lustrous violet, on both sides with light dots in 2 and 3. Forewing with discal spots in 1 b to 3 and three subapical dots arranged in a straight line in 6 to 8. *P. larea*.



§§. Hindwing beneath in the anal region and at the margin lighter than in the basal part, broadly bluish-grey. Forewing above with discal spots in 1 b to 3 and subapical dots in 6 to 8. Hindwing above with two white discal dots (in 2 and 3). *P. leucophaea*.

§§§. Hindwing beneath at the margin darker than in the basal part, with a white longitudinal line in area 1 c and with several white discal dots; above with a transverse row of small white discal spots between the veins 2 and 6. *P. unistriga*.

\*\* . Hindwing above with a white hyaline spot at the end of the discal cell and with two hyaline dots (in 2 and 3). Forewing with white discal spots in 1 b to 4 and subapical dots in 6 to 8. Wings beneath similar, except the forewing showing a larger white diffuse spot in 1 b and the hindwing a white dot in 7. *P. ogrugana*.

β. Hindwing above with a light transverse band of oblong discal spots which are altogether or at least partly united.

\*. Transverse band of the hindwing white.

§. The hyaline spots in the discal cell of the forewing are separate.

1. Hindwing beneath dark or yellowish-grey with white discal spots, but without a coherent dark marginal band.

a. Forewing with white discal spots in 1 b to 4 (or 5) and two subapical dots (in 6 and 7). Hindwing above with a light spot in the discal cell and a straight discal transverse band, beneath yellowish with the same spots as above; in the basal part of area 1 b and at the margin with black spots or bands. *P. tarace*.

b. Forewing with white discal spots in 2 to 4 and two subapical dots (in 6 and 7). Hindwing on both sides with a straight transverse band of 4 white discal spots (in 2 to 5), beneath monotonously yellowish-brown, with a dot in the discal cell. Fringes grey. *P. wambo*.

2. Hindwing beneath light yellow with a black marginal band and two triangular black spots in 1 c and 2, but without discal spots, above between the veins 1 b and 5 with a white transverse band which is bent towards the base. Wings above black; forewing above with white discal spots in 1 b to 4, but without subapical dots, beneath with two oblong subapical dots (in 6 and 7). *P. statirides*.

§§. The hyaline spots in the discal cell of the forewing are united forming a transverse spot. Wings on both sides blackish-brown, beneath at the margin lighter brown. Forewing with white discal spots in 1 b to 5 and three subapical dots (in 6 to 8). Hindwing above with a narrow white transverse band in 2 to 5, and beneath besides with a triangular spot in the discal cell and a basal dot in 7. *P. statira*.

\*\* . Transverse band of the hindwing yellow. Forewing with a yellow discal spot in 1 b, white discal spots in 2 to 4, and the usual three subapical dots in 6 to 8. The hyaline spots in the discal cell of the forewing are separate. *P. flavifasciola*.

II. Head and palpi decorated with white spots. Forewing above only with three discal spots, a yellowish one in 1 b, and one each in 2 and 3; the subapical dots are generally absent. Hindwing above with white or yellowish discal spots. The discal cell of the forewing with two separated or united hyaline spots above each other. *P. netopha*.

**P. micans** Holl. (= *marchalii* Snell.) (78 g) together with the following species *auritincta* forms a *micans*, separate, easily recognizable group, and occurs from the Ogowe Valley across Central Africa to British East Africa.

**P. auritincta** Btlr. (= *pyrrhobaphes* Mab.) (78 f) is very closely allied to *micans*, and seems only to *auritincta*, differ by the marks mentioned in the review. Tanganyica to British East Africa.

**P. melphis** Holl. Wings above black, at the base with greenish hair; forewing with white hyaline spots *melphis*, in 1 b, 2 to 7, that in 5 being minute and those in 2 and 3 the largest. Hindwing on both sides with a white transverse band extending at least between the veins 1 b and 6. Ogowe Valley.

**P. borbonica** is recognizable by the light yellowish, not transparent discal spot in 1 b of the forewing and the under surface being clothed with large, yellowish scales. It is common, widely distributed and occurs in two not sharply separated forms. — **borbonica** Bsd. (78 e, f) is without any hyaline dot in the discal cell *borbonica*, of the forewing. Madagascar. — **senegalensis** Klug (= *continentalis* Strd.) only differs by the discal cell *senegalensis*, of the forewing generally showing a small hyaline spot at the costal margin opposite vein 10. Everywhere on the continent of the Ethiopian region.

**P. fatuella** Hpffr. (78 e) is very closely allied to the preceding species and is often mixed up with *fatuella*, it, but it can easily be distinguished by the marks stated in the review. The discal spot in 1 b of the forewing

above is generally absent in the ♂, where as in the ♀ it is always distinct and white. Sierre Leone to South and East Africa.

*caffraria*. **P. caffraria** Plötz (= *fatuellus* Wall.) (78 e) differs from *fatuella* only by the monotonously dark brown under surface of the hindwing exhibiting no spots or 3 or 4 light dots. Cameroon to South and East Africa.

*ferruginea*. **P. ferruginea** sp. n. Both wings above blackish-brown; the forewing with 6 small discal spots, a yellowish one in 1 b and one hyaline spot each in 2, 3, 6, 7 and 8; hindwing uni-coloured without spots. Forewing beneath at the costal margin, at the apex and distal margin as far as vein 2, hindwing almost everywhere of a bright ferruginous brown. Forewing beneath at the posterior margin as far as into the discal cell and as far as vein 2 or 3 blackish, hindwing on both sides of vein 1 b darkened. Expanse of wings: 30 mm. East Africa: Daressalaam.

*entebbea*. **P. entebbea** Suh. is unknown to me. According to the description, the abdomen and wings are almost monotonously brownish-black, the forelegs and middle legs and the hind tarsi are orange-yellow; forewing above with two hyaline discal spots, the posterior spot being larger, and with three subapical dots, the middle dot being a little nearer to the base; the ♀ shows besides a small, lower discal spot; forewing beneath at the posterior margin broadly lighter; no other markings. Uganda: Entebbe. — According to this description it cannot be distinguished from the following species *alberti*.

*alberti*. **P. alberti** Holl. (78 f). ♂. Wings blackish-brown; forewing with white discal spots in 2, 3, 6 to 8, the spot in 7 nearer to the base, beneath at the posterior margin as far as vein 2 somewhat lighter; hindwing on both sides uni-coloured without markings. The ♀ deviates by the forewing above showing a small discal spot behind the centre of vein 1. Cameroon to Gabun, Ruwenzori and Usambara.

*xylos*. **P. xylos** Mab. (78 g), as the figure shows, is very closely allied to *alberti*, but larger, and it has differently shaped discal spots on the forewing. Gabun.

*poutieri*. **P. poutieri** Bsd. (= *ibara* Plötz) (78 e, f). Wings above blackish; forewing with three generally very small discal spots (in 2, 3 and 6); hindwing without spots. See also the review of the species and the figures. Madagascar.

*marchalii*. **P. marchalii** Bsd. only differs from *poutieri* by the reddish scaling of the wings beneath. Madagascar: Nossi-Bé. Mauritius.

*morella*. **P. morella** Joannis, from the Seychelles, seems only to differ from *marchalii* by the forewing above showing a discal dot in area 6 and the discal dots beneath being black-ringed.

*havei*. **P. havei** Bsd. (78 f, g). Forewing only with two discal spots (in 2 and 3); both wings beneath with a grey ground-colour, and the hindwing in the centre darkened. Madagascar.

*aures*. **P. aures** Mab. Wings above greyish-brown; forewing with hyaline spots in 2 and 3 and generally with hyaline dots in 6; hindwing not marked. Forewing beneath spotted as above, and besides with a white spot in 1 b. The hindwing beneath is described in the review. Mashuna Land and East Africa.

*cana*. **P. cana** Lathy (77 d). Wings above olive-brown; forewing with hyaline spots in 2 and 3 and hyaline dots in 6 and 7. Hindwing above not marked, beneath grey with a violet hue and three small white discal dots. Nyassa Land.

*albigutta*. **P. albigutta** Mab. Wings above blackish-grey, beneath lighter grey; forewing with hyaline spots in 2, 3 (and 4) and subapical hyaline dots in 6 and 7; hindwing above with white dots in 2 and 3, and beneath generally also in 4 to 6. The antennae are shorter than usually in the species of *Parnara*. Madagascar.

*anelia*. **P. anelia** B.-Bak. is unknown to me. The description says: „Both wings dingy brown with hyaline spots. Forewing with a spot in 2 and a smaller one in 3, a minute dot in 4, a dot in 7 and a small one in 8. Hindwing with a short transverse row of 4 discal dots between the veins 2 and 6. Under surface greyish with the same hyaline spots as above. 32 mm.“ Congo District: Mawamba-Makala.

*neoba*. **P. neoba** Mab. „Wings above smoke-brown; forewing with 5 unequally large, whitish spots: two dots at the apex and three small spots in the areas 2, 3, 4; that of area 2 is triangular and much larger. Hindwing with a row of 5 whitish-yellow dots in the areas 3, 4, 5, and 6; that of area 5 is double. Fringes grey. Forewing beneath blackish, darker at the margin; the spots as above. Hindwing beneath yellowish-grey, with the same dots as above; they are, however, distally bordered with black. Palpi grey, antennal club beneath whitish, at the apex black. 21 mm.“ Cameroon.

The following seven species are distinguished by the ♂♂ being above uni-coloured dark brown or blackish-brown without spots or markings. The frequently insignificant differences of the species have been stated in the review and need not be repeated here.

*palocampta*. **P. palocampta** Ham. Drc. Blackish-brown: forewing beneath at the posterior margin somewhat lighter. Cameroon.



**P. noctula** Ham. Drc. Uni-coloured brownish-black with equally coloured fringes. Palpi densely *noctula*, clothed with black and white hair. Antennae black with chestnut-brown tips.

**P. maranga** Btlr. ♂. Wings dark smoke-brown; forewing above with three bronze-brown, only in a *maranga*, certain light distinct longitudinal streaks at the median and at the veins 2 and 3, beneath with white subapical dots in 6 to 8. The ♀ differs by the forewing on both sides showing five hyaline spots (in 2, 3, 6 to 8). 32 mm. British East Africa on the Muthambi River on the southern side of Mt. Kenia.

**P. sinnis** Mab. (= *weymeri* Saalm.) (78 g). Palpi below dark grey. The ♂♂ before me are quite similar *sinnis*, to the ♀♀ and have no mealy spot of the forewing. Madagascar.

**P. albirostris** Mab. HOLLAND considers this species to be the ♂ of *sinnis*, in which case, however, the *albirostris*, ♂ of *sinnis* would have to be dimorphous. But as besides the palpi of *albirostris*, according to MABILLE, are below brimstone-coloured, *albirostris* is probably a species different from *sinnis*. The ♂ forewing above shows behind the discal cell a slanting, bent, lustrous black mealy spot. Madagascar.

**P. dolens** Mab. is quite dark black; hindwing above at the base clothed with red-brown hair. Fringes *dolens*, of both wings dark grey. Forewing beneath from the base to the apex of the discal cell with a jet-black stripe. Palpi yellowish-grey. Comoro Is.

**P. lugens** Hpffr. (78 e). The ♀ generally shows hyaline spots in 2, 3, and 6 to 8 on the forewing. Delagoa *lugens*, Bay to Kilimandjaro and Ruwenzori.

**P. ursula** Holl. (77 i). The ♂ is on both sides quite uni-coloured dark greyish-brown without markings; *ursula*, the ♀ has the same hyaline spots of the forewing as the ♀ of *P. lugens* (78 e), but it lacks the dark marginal band on the hindwing beneath. East Africa.

The following 12 species are distinguished from all the above-mentioned (except the continental form of *borbonica*) by the discal cell of the forewing showing on both sides a small whitish, generally oblong hyaline spot at the costal margin near the apex, opposite the base of vein 10. Future examinations may decide whether this mark stands the test.

**P. gemella** Mab. (= *ellipsis* Saalm.) differs from *P. borbonica* by the marks stated in the review, *gemella*, and by the three hyaline dots in 6 to 8 of the forewing not being arranged in a straight line, but in an obtuse triangle. West Madagascar and in the Islands of Mafia and Juan de Nova.

**P. holtzi** Plötz (79 a). The marks characterizing this species are to be seen from the review of the *holtzi*, species and from the figure. Angola.

**P. detecta** Trim. Forewing above with a small, roundish discal spot in 1 b behind the centre of *detecta*, vein 1, and with hyaline spots in 2 to 4, 6, 7 (8), of which those in 4, 6 to 8 are small and punctiform. Hindwing above normal with 5 small whitish discal dots in the areas 2 to 6, of which, however, those in 2 to 4 are generally indistinct or covered by the long brownish-yellow hairing. Under surface of both wings greyish-brown, scantily strewn with yellowish scales; the spots as above. The hyaline dot in area 7 of the forewing is always situate a little more towards the base than the two others. Natal to Kilimandjaro. — **karschi** *karschi*, form. nov. (= *borbonica* Karsch) is before me in a typical specimen from Togo and also from the Congo District. It has somewhat shorter and obtuser forewings, and the basal parts of both wings above are more thinly haired in a browner shade; the light discal dots of the hindwing above are thereby all distinct; those in 3 and 5 are always smaller and somewhat closer at the margin. As I cannot discover any other differences, I can only take *karschi* to be a northern race of *detecta*. This form was denoted as *falarus* by MABILLE (in litt.).

**P. gemina** Gaede is described as follows: „Ground-colour of both wings above uniformly dark brown; *gemina*, on the forewing the cellular spots are white hyaline; the spot above vein 1 is yellowish; there are but two subapical spots, corresponding to the second and third of similar species, they are almost beside each other, not below each other; cellular spot small. The discal spots in area 3, 2 and 1 are much smaller than in *borbonica* and somewhat larger than in *fatuella*. On the hindwing 2 yellowish-white spots in area 2 and 4. Under surface of both wings dark ochreous-brown, hindwing in the discal area somewhat lighter and with one yellowish spot each in the areas 2, 4 and 6; on the forewing the spots are as above. Expanse of wings: 28 mm.” Cameroon: Yaunde. — **trigemina** Gaede only differs by the forewing showing three subapical spots and the *trigemina*, hindwing exhibiting discal spots in 2, 3, 4, and 6. Togo.

**P. perobscura** Ham. Druce is likewise unknown to me. The author describes it as follows: „♂. Above *perobscura*, monotonously dark brown, feebly greenish at the bases of both wings. Forewing with a small, semi-transparent white spot in the discal cell behind the centre and close at the costal margin generally two, sometimes one or three small white subapical dots; a hyaline spot at the base of area 3 and a larger, more or less crescentiform spot more towards the base in area 2; in the area 1 b near the centre and situate on vein 1 there is a



small spot of a bright yellow colour. On the hindwing near the centre there are one or two minute whitish dots which may also be quite indistinct. The ground-colour beneath is dark brown, both wings, except the posterior margin of the forewing, densely covered with dark ochreous scales; spots as above. Fringes greyish-brown, lighter towards the anal angle. Palpi light yellowish with some brown hairs. Antennae below light, above black. Abdomen above brown, beneath light yellowish. 30 to 34 mm. — The ♀ is similar to the ♂, but lighter; generally with a subapical dot in area 8 of the forewing and with more distinctly prominent discal dots of the hindwing. Gold Coast: Addah and Uganda.

*punctata*. **P. punctata** Auriv. Wings on both sides blackish-brown; hindwing without spots; forewing with a small, oblong, yellowish spot in 1 b almost at the centre of vein 1 (it is sometimes absent altogether) and with six hyaline spots, a punctiform one in the discal cell and one each in 2, 3, 6 to 8; of these spots that in 2 is large, square or rounded off, and that in 7 is situate a little more towards the base than those in 6 and 8. German East Africa: Kilimandjaro.

*caesia*. **P. caesia** Gaede is compared with *P. cana* and described to differ from it as follows: „On the forewing there is but one minute white subapical dot in area 6, but there is another just as small white dot in the cell, which is not mentioned in *cana*. Forewing beneath somewhat lighter brown than above; costal margin, apex and distal margin only narrowly suffused with a greyish violet; beside the spots above there is another faded yellowish-white spot in the submedian fold. Hindwing suffused with greyish-violet, only at the anal angle of a purer brown; a median band of about 5 faded brown spots between the veins 2 and 7 is feebly recognizable. 29 mm.“ German East Africa: Madibira.

*aequalis*. **P. aequalis** Gaede „is very similar to the preceding species. Ground-colour above also violettish-brown. On the forewing the three white subapical dots are arranged in such a way that the central one is more inwardly removed; the dot in the cell is prolonged and forms a streak; the almost quadrangular discal spots are as in the preceding species, and besides there is another faded white dot in area 1 b; hindwing without markings. Ground-colour beneath different from that in *caesia*, of a purer yellowish brown without a violet reflection; the forewing shows beside the spots of the upper surface another fine subapical dot in area 5; the spot in 1 b is larger and more yellow than above; on the hindwing the central row of brown spots is very indistinct; but there are 2 white dots which are absent in *caesia*, one in area 4, the other in 5 at the transverse vein.“ German East Africa: Madibira.

*subochracea*. **P. subochracea** Holl. (78 f) is easily recognized by the figure and the marks in the review of the species. Ogowe Valley.

*chambezi*. **P. chambezi** Neave is allied to the preceding species, but smaller, 26 to 28 mm, and with more distinct spots on the hindwing above; fringes of the wings yellowish, at the base narrow black, and towards the apex of the forewing more or less darkened; on the forewing beneath the black colour of the posterior margin extends almost over the whole discal cell. It is probably only a race of *subochracea*. In the ♀ all the spots above are larger, more elongate, and a narrow streak in the area 1 b of the forewing is sometimes present. Rhodesia and Ruwenzori.

*monasi*. **P. monasi** Trim. Forewing with a longish hyaline spot in the discal cell, two subapical dots (in 6 and 7), and three discal hyaline spots, one each in 2, 3, and 4; the latter is minute. Natal.

All the following species are distinguished by the discal cell of the forewing exhibiting two separate or united white hyaline spots, whereby they are at once discernible from all the preceding species.

*mathias*. **P. mathias** F. (= *inconspicua* Bert., *micipsa* Trim.) (Vol. I, plate 88 f, g) is widely distributed and easily recognized by the marks stated in the review. Hindwing beneath normal with a white dot in the cell and similar discal dots in 2 to 6. In the whole Ethiopian region. — ab. ♀ **mohopaani** Wallengr.

*elegans*. Hindwing on both sides without spots or beneath only with two indistinct minute dots. Caffraria. — **elegans** Mab. (= *octofenestrata* Saalm.) is the form occurring in Madagascar. It differs from the type only by its somewhat smaller size and by smaller spots on the forewing; the hindwing above is often without spots, beneath covered with grey, with distinct dark-ringed discal dots. — **lodra** Plötz only differs by its somewhat smaller size, the darker ground-colour of the under surface, and lighter, almost white fringes. Cameroon, Gabun.

*umbrata*. **P. umbrata** Btlr. seems to be closely allied to the following species, *fallax*, though without the mealy spot of the ♂. „Allied to *P. borbonica* from Madagascar, dark smoke-brown, with a bent discal row of white hyaline spots; the three foremost are only separated by the subcostal veins; the largest at the base of area 2, the ♂ with two white hyaline dots in the discal cell; palpi laterally white; anal pencil white, at the tip black; centre of the chest and ventrum white. Hindwing beneath with a white dot in the discal cell and 4 or 5 dots in a bent transverse row midway between the cell and the margin. The ♀ has broader and somewhat shorter wings than the ♂.“ Comoros: Jane Island.

*fallax*. **P. fallax** Gaede ♂. Wings above blackish-brown, at the base less densely clothed with greenish yellowish hairs; these hairs occur on the forewing only in 1 a and 1 b. Forewing with two separate hyaline spots in the



discal cell and 7 discal spots, one of which is yellow, punctiform, situate in 1 b close at vein 1, and one hyaline spot each in 2, 3, 4, 6 to 8; the spot in 4 is punctiform (or rarely absent) and is situate in an almost straight line with the dots of the areas 6 to 8; beneath brownish-grey and scantily strewn with yellowish scales. Hindwing above generally only with 2, beneath with 2 to 5 discal dots, but without a dot in the discal cell. Fringes of forewing brownish-grey, of hindwing distally whitish. Palpi below whitish. Chest and ventrum with grey or yellowish hair. The ♀ is unknown to me. This species so closely agrees with *mathias* that it differs in fact almost only by the absence of the mealy spot of the forewing and by the presence of a small discal dot in 1 b. This proves how erroneous it is to establish *P. mathias* as the type of a separate genus (*Chapra*). Cameroon and Ruwenzori. — *hias* Strd. is described according to a ♂ from Nyassa Land and is said to exhibit, like *fallax*, *hias*, a light not hyaline punctiform spot in area 1 b of the forewing, whereby it evidently differs from *mathias*-♂. It therefore probably belongs to *fallax*.

**P. mabea** Holl. (77 e). Wings dark brown, beneath somewhat lighter, and on the hindwing with a *mabea*, slight reddish hue. Otherwise it only differs from *fallax* by the marks stated in the review. Ogowe Valley.

**P. bauri** Plötz (79 a) is copied from PLÖTZ' original figure. The description says: „Upper surface *bauri*, blackish-green; forewing with 2 white hyaline dots obliquely above each other in the discal cell, and one each in 2, 3 and 6, all remote from each other. The body is not strong. Antennae half the length of the forewing. 15 mm. Aburi.“ The species is otherwise unknown to me.

**P. argyroides** Holl. (78 h). Beside the marks stated in the review, the hindwing is beneath dark brown, *argyroides*, with a purple hue on the margin and with 4 small lustrous silvery spots. Ogowe Valley.

**P. saxicola** Neave is a species with broad wings, an expanse of about 35 mm, recognizable by the *saxicola*, marks mentioned in the review. Wings above dark greyish brown; the spots in the discal cell of the forewing are separate. Katanga in the southern Congo District.

**P. larea** Neave. Wings broad and roundish, above dark brown; fringes long whitish or yellowish; *larea*, palpi yellowish. Rhodesia.

**P. leucophaea** Holl. (77 b). The two white spots in the discal cell of the forewing are separate and of *leucophaea*, a slanting position, otherwise described in the review. Above black, the forewing and the basal part of the hindwing also beneath blackish; hindwing beneath with a white dot in the discal cell. Ogowe Valley.

**P. unistriga** Holl. Antennae black; club beneath of a bright yellow, palpi beneath whitish, chest grey *unistriga*, and ventrum of a pure white. Forewing above blackish with greenish hair at the base; discal cell with small separate spots; discal spots in 1 b to 4, 6 and 7; hindwing beneath with a white dot in the discal cell. Ogowe Valley.

**P. ogrugana** Lathy (79 c). Discernible from the other species of this group by the large white spot *ogrugana*, at the end of the discal cell of the hindwing. Nigeria.

**P. tarace** Mab. is sufficiently described in the review. Sierra Leone.

*tarace*.

**P. wambo** Plötz (77 e) is described in the review. Reported from Africa.

*wambo*.

**P. statirides** Holl. (78 i) is well distinguished by the hindwing beneath. Ogowe Valley.

*statirides*.

**P. statira** Mab. (78 h) is fully described in the review. Sierra Leone.

*statira*.

**P. flavifasciola** Ham. Druce differs from all the other species by the hindwing showing on both sides *flavifasciola*, a sharply defined yellow median transverse band; this transverse band is above only about 2 mm broad, anteriorly somewhat narrowed; beneath it is much broader extended to vein 8 and in area 7 about 5 mm broad. South Cameroon.

**P. netopha** Hew. (78 h). Antennae black. Tegument at the proximal margin red-haired. Abdomen *netopha*, beneath white with two rows of black spots. Beside the marks mentioned in the review, this species differs from all the others by the hindwing beneath being decorated with nine distinct black dots; two of them are near the base (in 1 c and 7), one at the apex of the discal cell, and six discal spots in a bow, one each in 1 c to 7. The ground-colour beneath is very variable and has caused several forms to be established, which, however, are not sharply separated. In the typical form the hindwing and the apex of the forewing beneath yellowish with or without a reddish hue, and with short black longitudinal lines at the margin on the internerval folds, and with a fine black marginal line. West Africa to Uganda. — **nyassae** Hew. (= *roncilgonis* Plötz, *cojo* *nyassae*, *Karsch*) (78 h). On the under surface the hindwing and the apex of the forewing show a violettish-grey ground-colour, distinct dark rays at the margin on the internerval folds, and a very fine black marginal line which may also be absent on the forewing. Togo; Angola; Rhodesia; Mashuna Land. — ab. **ennuari** Riley only differs *ennuari*, from *nyassae* by its lighter under surface. Solwezi.

I append the following species unknown to me and described as *Chapra*, from Delagoa Bay:

*marcus*.

**P. marcus** *Strd.* „♂. Upper surface brown, terminal half of the fringe lighter (on the forewing 5 or 6 times interrupted by dark); forewing with the stigma peculiar of the ♂, a jet-black, 3 to 4 mm long, 1 mm broad oblique streak being feebly convex towards the base, 1.3 mm distant from the posterior margin and extending in front to the bases of the veins 3 and 4; before the point of the stigma, at a distance of 1 mm, there is a light punctiform spot, and outside of the point, at a distance of more than 2 mm, there is a similar one; both are rather indistinct. At the costal margin, rather vertically on it, at a distance of 4 mm from the apex of the wing, there is a straight transverse row of three small, but distinctly marked, whitish, elongate punctiform spots. Hindwing with traces of two lighter punctiform spots in the anterior half of the marginal area, forming a transverse row vertically placed on the costal margin; these spots will probably be sometimes absent altogether. — Under surface of all the wings lighter brown with a faint greenish-yellow reflection and with more abundant and more distinctly marked whitish dotting: forewing at the costal margin with three dots forming a transverse row as above; at the apex near the margin a transverse row of 2 or 3 most indistinct, sometimes probably absent, whitish dots; in the areas 2, 3, 4 and 5 one white punctiform spot each, those in 4 and 5 being quite small and situate behind the apex of the transverse row, whilst the spot in area 2 is much larger and in an oblique position, the row formed by these 4 spots is very oblique (at the anterior end 2, at the posterior and 4 mm distant from the margin) and very feebly bent towards the margin. In the cell near the discocellular a round punctiform spot forming, together with the two posterior ones of the oblique row, an isosceles triangle being turned longitudinally. Behind this an indistinct whitish diffuse patch fills up the terminal half of the anal-marginal area. Hindwing beneath with a transverse row of 6 or 7 small, oblong, white punctiform spots, being almost semicircularly curved convex towards the margin, in front about 2, behind about 3½ mm distant from the margin, and with one white punctiform spot each at the end of the cell and, somewhat nearer to the base, in the centre between this spot and the costal margin; the light fringes are not interrupted by dark. Body above dark brown, beneath greyish. Antennae black, with white rings, the curved tip red, base of club beneath whitish. Expanse of wings: 30 mm. Length of wings 15 mm. Length of body 16 mm.“

## 21. Genus: **Gegenes** *Hbn.*

This genus is particularly distinguished by the very short antennae not reaching to the apex of the discal cell of the forewing, and a very short and fine, sometimes indistinct point of the antennal club. The middle and hinder tibiae are finely spined. Vein 2 of the forewing rising behind the centre of the discal cell. Last palpal joint hidden or coniform and shortly projecting. Wings in the ♂♂ above dark without any light spots, forewing in the ♀♀ generally with light discal spots in 1 b, 2, 3, 4 (5), 6, 7, (8).

### Review of the Species.

A. Palpi below white or whitish-grey. Hindwing beneath with an ash-grey or whitish-grey ground-colour or in 2 to 7 with grey scales on a brown ground.

*G. nostrodamus.*

*G. monochroa.*

*G. occulta.*

B. Palpi below yellowish. Hindwing beneath with a yellow ground-colour.

*G. niso.*

*nostrodamus.*  
*karsana.*

**G. nostrodamus** *F.* (= *gambiae* *Mab.*) has been described and figured in Vol. I (p. 349, plate 88 c). Senegambia, Sahara, Nubia. — **karsana** *Moore* is a local race distinguished by its light brown upper surface and intensely lustrous whitish-grey under surface. Arabia.

*monochroa.*

**G. monochroa** *Rebel* is only known from the Island of *Sokotra* and is very similar to the following species *occulta*. „Rather squat, palpi and chest below yellowish-white, the wings in both sexes above jet-black without any markings; beneath somewhat more brownish, forewing with quite extinct pale dots in the cells 2 to 5, and three costal dots below each other. Hindwing with hardly noticeable lighter dots particularly in cell 6.“

*occulta.*

**G. occulta** *Trim.* is very much like *G. nostrodamus* and presumably only a southern race of that species. In the ♂ the forewing above is blackish in the basal half, whilst in the ♀ it shows whitish discal spots like in the ♀ of *nostrodamus*.

*niso.*

**G. niso** *L.* (= *letterstedti* *Wallengr.*, *brevicornis* *Plötz*, *hottentotta* *Trim.*). The identity of this species with *niso* *L.* has been doubted. But the original drawing by CLERCK, which is still preserved in the Library of the Academy of Sciences at Stockholm and which is denominated *niso* in LINNÉ's own handwriting (later on published by myself in *Recensio crit. Lepid. Musei Lud. Ulr.*), sufficiently shows that no other Hesperid can have been lying before LINNÉ. The short antennae and the yellowish under surface of the hindwing (which is unfortunately not so well done in my plate as in the original drawing) as well as the macular marking of



the forewing do not occur together in any other South African *Hesperida*. — ♂. Both wings above yellowish-grey without markings, with somewhat mealy scales, hindwing as far as beyond the centre with yellowish hair. Forewing beneath in the basal part and at the costal margin yellowish with oblong, though indistinct, light yellow discal spots in 2 to 8; hindwing beneath for the greatest part light yellow, at the costal and proximal margins particularly in 1 b and 1 b darker, brownish and with traces of darker discal and submarginal spots in 2 to 6. Chest and ventrum with yellowish hair. The ♀ differs by the forewing above showing distinct whitish-yellow or yellow discal spots in 1 b to 8, and by the ground-colour beneath being a brighter yellow, with more distinct markings. The ground-colour above is darker than in the ♂ and not covered with mealy scales. South Africa and East Africa to Ruwenzori and Elgon. — **hottentotta** Latr. (= *obumbrata* Trim.), according *hottentotta*. to BUTLER, NEAVE and other authors, is said to be merely a form of *niso*. The ♂ makes an entirely different impression by the forewing above being yellow at the base and at the costal margin as far as beyond the centre, the marginal part dark brown, and between these colours in the areas 1 b and 2 with a large almost black mealy spot. The ♀ is unknown to me, but it is said to correspond entirely with the ♀♀ of *niso*. The ♂, moreover, is smaller on an average than *niso*-♂, and it has narrower and more pointed forewings. South Africa and West Africa to Liberia.

## 22. Genus: **Kedestes** Wts.

The species of this genus differ from those of *Gegenes* by longer antennae and the distinctly prominent light (yellow or white) markings above. Antennal club obtuse or somewhat pointed though without a bent point. Third palpal joint horizontally porrect. Vein 2 of the forewing rises at or before the centre of the cell, vein 11 is separate and of a straight course. Vein 5 of the hindwing distinct. Hinder tibiae with 4 spurs. Forewing above always with two light spots in the apex of the discal cell and with discal spots in 1 b, 2, 3, 6, 7 and 8, sometimes also in 4 and 5. Hindwing above without markings or with 1 or 2 spots at the apex of the discal cell and 2 or more discal spots. Both wings besides in several species with reddish-yellow spots close at the margin.

### Review of the Species.

A. Hindwing above at least with one yellow spot in the centre, beneath without white longitudinal streaks or white veins.

α. Both wings above without reddish-yellow submarginal spots between the veins, but sometimes with the veins coloured yellow at the margin.

\*. Hindwing beneath uni-coloured, light yellow without markings. *K. lepenula*.

\*\*. Hindwing beneath with dots or spots.

§. The discal spot 2 of the forewing is situate in the centre of its area and distinctly more towards the margin than the posterior angle of the discal cell, in the basal angle of area 2 sometimes another triangular yellow spot. Forewing without discal spots in 4 and 5. Hindwing beneath with several black dots, but without white spots.

o. The black dots of the hindwing beneath are small, dispersed and less numerous.

1. The veins above at the margin not light coloured. *K. macomo*.

2. The veins above at the margin yellow. *K. rogersi*.

oo. Hindwing beneath with numerous, large, black basal and discal dots and besides with a complete row of black submarginal spots, which is parallel to the margin. *K. capenas*.

§§. The discal spot 2 of the forewing is situate near the base of its area and almost right behind the apex of the discal cell.

o. Hindwing beneath uni-coloured yellow with some black dots, but without light spots. Forewing without discal spots in 4 and 5. *K. lentiginosa*.

oo. Hindwing beneath with a complete row of light yellow or white discal spots encircled with black in the areas 1 c to 7 and a similar spot at the apex of the discal cell.

1. Hindwing beneath light yellow with two black basal dots, one each in 1 c and 7. Forewing with discal spots in 4 and 5. Hindwing above with distinct discal spots and a central spot. All the discal spots above are yellowish. *K. callicles*.

2. Hindwing beneath yellowish-brown without black basal dots, but instead of them with two white, black-ringed spots. Forewing without discal spots in 4 and 5, its spots white and transparent. Hindwing above almost uni-coloured blackish-brown, only with traces of 2 or 3 discal spots. *K. malua*.

β. At least the forewing above between the veins with a distinct row of red, reddish-yellow or whitish submarginal spots; beneath these spots are combined into a submarginal band. Fringes of the wings white or whitish, at the ends of the veins spotted black. Hindwing beneath variegated, with numerous black dots and between the veins 1 b and 7 with a coherent white or whitish discal transverse band, the spots of which are towards the base and margin bordered by black dots or transverse streaks.

\*. Forewing above without discal spots in 4 and 5. Hindwing beneath in the basal part orange-red and only with two black dots, one in the discal cell and one in area 7; all the other black dots border on the light grey discal band which is very broad in the areas 2 to 7; the area 7 of the hindwing beneath thus only shows 3 black dots. *K. mohozutza*.

\*\* . Forewing above with discal spots in 4 and 5 or at least in 4. Hindwing beneath in area 7 at least with 4 black dots or transverse streaks, two near the base and one on each side of the discal band.

o. Hindwing beneath in the basal part without white, sharply defined basal spots, but with separate black dots, two in 7 and one each in 1 b and in the cell; its discal band is narrow and almost equally broad.

1. Hindwing beneath with a fine dark marginal line. *K. paola*.

2. Marginal line of the hindwing beneath broken up into streaks or spots. *K. tucusa*.

oo. Hindwing beneath in the basal part with three whitish spots on both sides bordered with black, one each in 1 c, 7 and the discal cell; ground-colour orange-red; discal band narrowed in 1 b to 3. *K. chaca*.

B. Hindwing above uni-coloured blackish or at most with one white discal spot, beneath with light veins or light stripes from the margin almost to the base.

α. Fringes of the wings white with black spots at the ends of the veins. Hindwing above with a light spot at the end of the discal cell, beneath with two light longitudinal stripes, one in 1 c and one in the discal cell and area 5. Forewing with a discal spot in area 5. *K. barberae*.

β. Fringes of the wings spotless, grey or whitish. Hindwing above without markings. Forewing without a discal spot in area 5.

\*. Ground-colour of the hindwing beneath light brown or yellowish-brown without separate black dots, but with lighter veins.

o. Forewing without a discal spot in area 4.

1. Hindwing beneath without a white longitudinal stripe at the anterior margin of the cell.

a. Hindwing beneath with a dark line from the base through the discal cell and the area 4 to the margin; area 1 b in its whole length darkened. *K. brunneostriga*.

b. Hindwing beneath without a dark line in the discal cell, but at the proximal margin in 1 a to 1 c and at the apex in 6 and 7 more or less darkened. *K. fenestrata*.

2. Hindwing beneath with a white longitudinal stripe filling up the anterior longitudinal half of the discal cell and the whole area 5; a similar, though narrower stripe extends from the centre of area 1 c to the margin. The proximal margin in 1 a is white, too. *K. wallengreni*.

oo. Forewing in area 2 with a discal spot which is situate right in front of the spot in 3.

*K. niveostriga*.

\*\* . Hindwing beneath with a blackish ground-colour, grey veins and some separate black dots in 5 to 7. Forewing with a discal spot in area 4. Hinder tibiae only with terminal spurs. *K. lema*.

*lepenula*.

**K. lepenula** Wallengr. (= *chersia* Hew.). Wings above brown with light yellow markings, beneath uni-coloured light yellow without markings, only in the basal part of area 1 b on the forewing darkened blackish; forewing above in the basal part as far as the apex of the discal cell light yellow, then with a transverse band (only interrupted in 4 and 5) of large, oblong discal spots in 1 b to 3 (5), 6 to 8. South Africa: Cape Colony and Transvaal.

*macomo*.

**K. macomo** Trim. (= *aleta* Plötz) (78 b). Hindwing above with a yellow spot in the discal cell and an irregular, though complete row of yellow discal spots. The typical form differs from the following form by the hindwing beneath being almost monotonously yellow and marked with about ten small black dots. South Africa to Delagoa-Bay. — **marshalli** *form. nov.* is somewhat larger, but above quite similar to the type, beneath different by the hindwing being orange-yellow at the proximal margin and along the centre (in the discal cell and the areas 4 and 5) and only exhibiting 6 somewhat larger black dots, one each in 1 b to 3, 6 to 8. Mashuna Land: Umtali, discovered by G. A. K. MARSHALL.

*marshalli*.



**K. rogersi** *H. Dree.* is very similar to the preceding species, but differs above by the veins being *rogersi*. coloured yellow at the margin, and beneath by the long, fine, black longitudinal lines at the margin on the internerval folds. The ground-colour of the hindwing beneath is almost as in *macomo* (78 b); the black dots, however, are only 6 in two transverse rows; the proximal transverse row consists of three dots in 1 c, the discal cell and 7, the distal row also of three dots in 2, 4 and 6. Usambara and British East Africa.

**K. capenas** *Hew.* (78 c) is easily ascertained by the review and the figure. The veins above at the *capenas*. margin coloured yellow. Zambesi. — **derbice** *Hew.* only differs by the veins above being black as far as the *derbice*. margin. Manica and Nyassa Land.

**K. lentiginosa** *Holl.* (78 d), as the figure shows, differs above considerably from the other species. *lentiginosa*. Gabun.

**K. callicles** *Hew.* (78 c) is sufficiently described in the review. Southern Congo District, Angola, *callicles*. Damara Land, Natal, and East Africa as far as the Somali Land.

**K. malua** *Neave* (78 d) is easily discernible from *callicles* by the marks stated in the review. Rhodesia. *malua*.

**K. mohozutza** *Wallengr.* (? = *nerva* *F.*) (78 d) is distinguished by the broad discal band of the *mohozutza*. hindwing beneath and the other marks mentioned in the review. Caffraria, Natal, Zulu Land, and Transvaal.

**K. paola** *Plötz* (78 d) is figured here from PLÖTZ' original figure. Angola. *paola*.

**K. tucusa** *Trim.* The ground-colour in the basal half of the hindwing beneath is for the greatest part *tucusa*. yellowish white with distinctly prominent black dots. In the ♂ the submarginal spots above are only feebly marked. Hindwing above without discal spots, but in the ♀ with a yellow spot at the end of the discal cell. Natal and Transvaal.

**K. chaca** *Trim.* (78 c) is at once recognizable by the colouring and marking of the hindwing beneath. *chaca*. Forewing with discal spots in 4 and 5. South Africa to Angola.

**K. chacoides** *Gaede* is unknown to me, but it is said to be very similar to *chaca*. Discal spots of the *chacoides*. forewing white and all present, that in 1 b in the ♂ double, in the ♀ single. According to the description, the most important difference seems to consist in the red-brown median band of the hindwing being broken up into spots, and the discal band being greyish-brown (not whitish). Cameroon.

**K. protensa** *Btlr.* is described as follows: „Allied with *K. tucusa* *Trim.*, but much larger (35 mm), *protensa*. costal margin of forewing and proximal margin of hindwing much longer; hindwing above without discal spots and sometimes also without the hairy white or yellowish spot at the end of the discal cell; the colouring beneath is more intense; forewing at the costal margin and apex as well as the submarginal spots tan-coloured yellow with an orange hue; hindwing almost as in *mohozutza* alternately yellowish and orange; the black discal dots of the hindwing do not form a regular W as in *tucusa*, but they are almost parallel to the submarginal row; there is also a dark, submedian, inwardly tapering stripe from the margin to the base.“ Nigeria.

**K. barberae** *Trim.* (78 c) differs from all the other species by the marking beneath. Cape Colony *barberae*. and Transvaal.

**K. brunneostriga** *Plötz* (78 b) is figured from PLÖTZ' original figure. Angola. *brunneostri-*

**K. fenestrata** *Btlr.* (78 d) only differs from *brunneostriga* by the marks stated in the review. Nyassa *fenestrata*. Land near Zomba.

**K. wallengreni** *Trim.* (78 c) is distinguished by the two white stripes of the hindwing beneath. Natal, *wallengreni*. Mashuna Land, Kilimandjaro.

**K. niveostriga** *Trim.* is very similar to *fenestrata*, but it differs from it and the other allied species *niveostriga*. by the presence and position of the discal spot 4 on the forewing. Cape Colony to Zulu Land.

**K. lema** *Neave* (78 e).<sup>c</sup> The grey veins of the hindwing beneath are in the centre of the wing connected *lema*. by some lighter transverse streaks, whereby some dark spots or dots of the ground-colour are separated. Southern Congo District: Katanga.

**K. ? miranda** *Btlr.* is unknown to me and was described according to a single ♀ from British East *miranda*. Africa (Massai Land). From the long description we mention the following: „Above the most similar to *K. fenestrata*, but the fringes are yellowish-brown and the hyaline spots behind the apex of the discal cell larger, less slantingly arranged and only separated by vein 3; the discal cell of the forewing and the basal half of the hindwing clothed with ochreous-yellow hair. Forewing beneath blackish, at the costal margin ochreous-yellow and at the base covered with reddish, towards the apex of the wing expanded into a light yellow triangular spot; the subapical hyaline spots are distally bordered with black; the triangular yellow apical spot is distally bordered by a blackish macular line and a broad ferruginous-brown band; fringes reddish-brown. Hindwing beneath light ochreous. The costal, proximal and distal margins are rust-coloured, in the basal third there are four dark rust-brown dots, two in the discal cell and one each in 1 c and 7; a large quadrangular spot

near the costal margin is violettish-grey and partly bordered with black; slantingly behind it a small, split spot; between vein 1 b and the apex a distinctly prominent, dark rust-brown band, and outside of it a similar incomplete line which is partly adjacent to the margin; a marginal row of brown dots; fringes reddish-brown. Expanse of wings: 33 mm."

### 23. Genus: **Osmodes** Wts.

All the species of this genus are at once discernible by the white or silvery, dark-encircled dots or spots of the hindwing beneath (generally 4 in 1 c, 5, 7, and the discal cell), and the ♂♂ by the brown mealy spot on the hindwing above. Palpi slightly bent upwards with a short conical terminal joint. Antennal club fusiform without a sharp point. Vein 2 of the forewing rises before or at the centre of the cell, vein 5 is feebly though distinctly bent at its rise, 11 runs separately. The sexes are so dissimilar above, that they must be separately dealt with in the review of the species.

#### Review of the ♂♂.

Both wings above for a great part or for the greatest part yellow, reddish-yellow or yellowish-brown. Forewing beneath at the posterior margin with a black or grey hair-pencil.

A. Forewing above with an almost equally broad, black marginal band which is proximally sharply defined. The mealy spot of the hindwing does not reach to the base of the wing.

α. Hindwing above as far as the costal margin yellow, only at the apex and posterior margin narrowly black. The yellow colour of the forewing above reaches to the base.

\*. Larger, about 31 mm; above lighter yellow. The yellow subapical spots of the areas 6 to 9 of the forewing above are united with the other yellow colour by a yellow spot in area 5 and separate a black double spot at the end of the discal cell from the marginal band. *O. laronia*.

\*\* . Smaller, about 27 mm, above more orange-yellow. The subapical spots 6 to 9 of the forewing above form a separate triangular spot, the area 5 being uni-coloured black. *O. adosus*.

β. Hindwing above at the costal margin at least as far as the discal cell broadly black.

\*. The yellow colour of the forewing above, in 1 a and 1 b as well as in the discal cell, reaches to the base of the wing, though it grows somewhat darker. The discal cell lacks the black longitudinal spot in the basal part. The subapical spot of the forewing is separate and rounded off.

1. Hindwing beneath light yellow with white spots in 1 c, 2, 7, and the cell. *O. thora*.

2. Hindwing beneath dark brown with white spots in 1 c, 5, 7, and the cell. *O. distinctus*.

\*\* . The yellow colour of the forewing above does not reach to the base of the wing in the discal cell or it is parted there by a black longitudinal spot.

+. The yellow colour of the forewing above, in the areas 1 a and 1 b extends to the base of the wing. Hindwing beneath generally with white discal spots also in 2 to 4.

1. Forewing above in the basal part of the discal cell with a narrow black longitudinal spot, or quite black. Hindwing beneath between the white discal spots and the fine black marginal line lighter greyish-yellow. *O. chrysauge*.

2. Forewing above in the basal part quite black. Hindwing beneath between the white discal spots and the dark marginal band of a bright yellow. *O. thops*.

++. Forewing above at the base in all the areas at least as far as the base of vein 2 black, rarely at the costal margin covered with yellowish.

1. The yellow discal spot of area 2 on the forewing above entirely or almost entirely fills up the base of its area and closely adjoins the light spot of the discal cell. The mealy spot of the hindwing above is dark and distinctly prominent.

a. Forewing with yellow discal spots in 1 a, 1 b, 2, 3, 6, 7, 8. *O. adon*.

b. Forewing above without yellow discal spots in 1 a and 1 b, or only with a longitudinal streak at the costal margin in 1 b, but in 2 to 8 with yellow discal spots. *O. banghaasi*.

2. The yellow discal spot of the area 2 of the forewing is broadly separated from the spot of the discal cell by the black ground-colour. The mealy spot of the hindwing is of a light colour. *O. lux*.

B. Forewing above at the margin only gradually somewhat darker brown with black veins and a fine black marginal line. The mealy spot of the hindwing is large and almost reaches to the base of the wing.

*O. costatus*.



Review of the ♀♀.

The ♀♀ differ from the ♂♂ by both wings above being blackish-brown with yellow discal spots and 1 or 2 yellow spots in the apex of the discal cell of the forewing.

A. The double spot in the discal cell of the forewing and the discal spot 2 or 3 of the forewing touch each other (only separated by the dark median vein). Forewing above without discal spots in 1 a (4), 5 (and 8).

α. Larger species, about 31 mm.

\*. Hindwing beneath in the basal part very much darkened, brown or greenish brown. *O. laronia*.

\*\*. Hindwing beneath in the basal part light yellow. *O. thora*.

β. Smaller species, 25 to 28 mm.

\*. The discal spot 3 of the forewing is distinctly triangular and entirely covers the base of the area 3.

*O. adon*.

*O. chrysauge*.

*O. adosus*.

*O. banghaasi*.

*O. distinctus*.

*O. thops* \*).

\*\*. The discal spot 3 of the forewing is shortened towards the base and does not cover the base of the area 3.

*O. costatus*.

B. The double spot in the discal cell of the forewing is completely separated from the discal spots by the black ground-colour.

α. Forewing above with a yellow longitudinal streak in 1 a, but without a discal spot in 4. The discal spots of the hindwing above are large and long.

*O. lux*.

β. Forewing above in 1 a not marked, but with discal spots in 4 to 6. The discal spots of the hindwing above are small, punctiform.

*O. staudingeri*.

As nearly all the species of this genus are figured and described in the reviews of the species, I confine myself to statements about their geographical range. All of them belong to the region of the West African tropical primeval forests.

**O. laronia** Hew. (77 f). Gold Coast to Gabun, Ituri and Ruwenzori.

*laronia*.

**O. thora** Plötz (77 f). „Guinea“. Gabun.

*thora*.

**O. adon** Mab. (77 g). Sierra Leone to Gabun.

*adon*.

**O. chrysauge** Mab. (77 g). Nigeria: Loko. Cameroon.

*chrysauge*.

**O. adosus** Mab. (77 h). Sierra Leone to Gabun.

*adosus*.

**O. thops** Holl. (77 h). Togo. Gabun.

*thops*.

**O. distinctus** Holl. (77 h). Gabun.

*distinctus*.

**O. banghaasi** Holl. (77 h). French Congo.

*banghaasi*.

**O. lux** Holl. (77 g). Ogowe Valley; Belgian Congo.

*lux*.

**O. costatus** Auriv. (= *cottoni* B.-Bak.). The ♂ differs from all the other species by the forewing above being brown as far as the fine marginal line, with black veins and yellowish-brown discal spots distally indistinctly defined, and a similar small spot in the discal cell; jet-black are only an oblong spot in the cell, a triangular spot behind the cell-end in (3), 4 and 5, and a transverse spot at the posterior margin behind the centre of the areas 1 a and 1 b. Hindwing above at the base and at the hind-margin black, in the marginal half deep yellow with a fine dark marginal line. The ♀ differs but little from the ♀♀ of the other species. Cameroon and Congo District.

*costatus*.

**O. staudingeri** Holl. (77 g). Of this species only the ♀ is known, and it is not quite certain whether *staudingeri*. it belongs to the genus *Osmodes*. Ogowe Valley.

## 24. Genus: **Rhabdomantis** Holl.

This genus differs but little from *Osmodes*, but it has a different marking of both wings. Only one species. ♂. Forewing beneath without a hair-pencil at the posterior margin.

**Rh. galatia** Hew. (= *rhabdophorus* Mab.) (77 h ♀) is easily recognizable in the ♀ by the figure. *galatia*. The ♂ occurs in two forms; in both the forms the hindwing above is yellowish-brown, and at the costal margin

\* The differences of the ♀♀ of these six species are insignificant and not yet clear to me.

as far as the posterior edge of the discal cell very broad black, and both wings beneath are yellowish-brown or brownish-yellow, lighter at the posterior margin of the forewing and at the hind-margin of the hindwing, but without spots. In the typical form the forewing above is darker brown, at the apex and at the margin very broadly darkened, and at the border of the colouring with a distinctly prominent, black, straight transverse line formed by androconia (mealy scales) between vein 5 and the posterior margin. Abdomen on each side with a hair-pencil, and the hindwing at the hind-margin with a light longitudinal groove. — In the male form *sosia* Mab. the wings are on both sides of a lighter yellowish brown, the forewing above towards the margin less darkened and without any black mealy streak, though with a dark triangular spot behind the discal cell in 4 and 5. Abdomen without a hair-pencil, and the hindwing at the hind-margin with a black groove. The species occurs from Sierra Leone to Mossambique.

## 25. Genus: **Osphantes** Holl.

The only species belonging to this genus has remained unknown to me and seems only to differ by the marking of *Osmodes*.

*ogowena*. **O. ogowena** Mab. Wings above blackish-brown with yellow markings; forewing above at the costal margin as far as beyond the centre orange-yellow, at the end of the discal cell with a rounded yellow spot and with yellow discal spots in 2 to 6, and in the cell also yellow; a hyaline spot at the base of area 1 c. Wings beneath yellow; forewing with the spots almost as above, but light yellow, at the posterior margin in 1 a and 1 b whitish and almost without scales; hindwing only with 2 minute black dots in 1 c and 5, and at the margin somewhat darkened. Ogowe Valley.

## 26. Genus: **Parosmodes** Holl.

This genus is also closely allied to *Osmodes*, but it differs by the formation of the last palpal joint. The antennal club has a moderately long though sharp point which is bent down almost in a right angle. ♂. Forewing beneath with a black hair-pencil at the posterior margin. Only one certain species is known to me; the others probably belong to the genus *Oxypalpus*.

*morantii*. **P. morantii** Trim. (77 i). ♂. Forewing above at the costal margin in 12 and 11 yellow, and with a square yellow spot at the end of the discal cell, large discal spots in 1 b to 3, a small one or none at all in 4 and very large ones in 5 to 7. Hindwing above with a discal transverse band in (1 c) 2 to 5. Fringes of both wings yellow. Forewing beneath at the posterior margin in 1 a, at the posterior angle and in the basal part of the discal cell black, and with a black transverse streak at the cell-end. Otherwise with a yellow (ab. *ranoha* Ww.) or red-brown ground-colour and light yellow discal spots in 1 b to 3. Hindwing beneath light yellow or red-brown, the hind-margin broad yellow, always with 8 or 9 small black dots. South Africa to Owambo Land and Zambesi.

*rubescens*. **P. rubescens** Holl. (77 e). HOLLAND, on account of the formation of the palpi, places this species which is unknown to me to the genus *Gorgyra*, to the species of which it is otherwise very dissimilar. But as the palpi of the genus *Parosmodes* are similar to those of *Gorgyra*, and *rubescens* corresponds much better with *P. morantii* by the marking and colouring, I place it to *Parosmodes* for the present. The figures make a further description superfluous. Ogowe Valley.

*icteria*. **P. icteria** Mab. This species, which was never figured, was hitherto generally united with *Oxypalpus biseriatus* Mab. (see p. 553). But as HOLLAND assures us that *icteria* is „strictly congenerie with *morantii*“, and the description of *icteria* does not fit any of the species of *Oxypalpus*, I regard for the present *icteria* as a species being still unknown to me. MABILLE describes the species as follows: Wings above black with large golden yellow bands and spots; the forewing has a broad yellow band from the base to the apex, where it reaches to the costal margin, and bordered by the discal cell; the latter is striped blackish except at its apex where there is a large light spot surrounded by greyish-yellow. The marginal band is black, broader at the posterior angle, and the posterior margin is likewise black. The basal half is brownish. The fringes are golden yellow. Hindwing with a large yellow spot, all round as far as the fringes surrounded with black. Under surface yellow: forewing with a streak in the cell and a very large shade at the posterior angle black. Hindwing golden yellow with a black dot at the base and 4 or 5 smoke-brown discal dots arranged in a bow. 25 mm.“ Transvaal.

## 3. Subfamily: **Heteropterinae**.

Very closely allied to the preceding subfamily and only different by the vein 5 being quite straight at its beginning and not bent towards the vein 4.



I. Antennae short, not or hardly reaching to the apex of the cell of the forewing. Antennal club short and quite straight, fusiform, at its tip obtuse or in the shape of a short cone. Third palpal joint short and almost hidden, but straightly porrect. Hinder tibiae normal with 4 spurs. Wings without hyaline spots.

α. Palpi roughly scaled, but without long black hair. Last joint short. 1. *Ampittia*.

B. Vein 11 of the forewing more or less united with vein 12; the area 11 is thereby externally closed.

II. Antennae long, reaching to or projecting beyond the apex of the cell of the forewing. Antennal club more elongate and extended into a sharp, more or less bent down point. Vein 11 of the forewing runs separately.

$\alpha$ . Third palpal joint very long and thin, erect or slantingly pointed sideways, „bare“ and very pointed.

5. *Heinorhinus*.

1. Fringes of the hindwings and the apex of the abdomen dark. 6. *Prosopalpus*.

2. Fringes of the hindwings and the apex of the abdomen white. 7. *Acleros*.

β. Third palpal joint short or moderatley long, scaled and coniform. Wings above black with white hyaline spots.

\*. Third palpal joint long, thick, almost cylindrical, horizontally porrect or somewhat pendant.

1. Hindwing beneath for the greatest part white. 8. *Hypoleucis*.

2. Hindwing beneath only with white hyaline spots. 9. *Gorgyra*.

10. *Oedaloneura*.

\*\* Third palpal joint short, knob-shaped, not horizontally porrect. 11. *Gastrochaeta*.

B. Hinder tibiae only with 2 spurs. (According to MABILLE).

$\alpha$ . First joint of hinder tarsi in the  $\sigma$  strongly inflated. 12. *Malaza*.

β. Hinder tarsi not inflated. 13. *Manorina*.

The genus has already been described in Vol. IX. *A. lynx* *Mschlr.* which was described as a questionable African species, certainly originates from Asia and is probably identical with *maroides* *De Nicév.*

A. Hindwing above in the centre with a large yellow or white area and only at the margins, at least at the costal margin, black.

$\alpha$ . Hindwing above black all round (at the costal margin, distal margin, hind-margin and base).

\*. The yellow spot in the discal cell of the forewing above is united with the discal spots 1 b to 4 and with a longitudinal stripe in the basal half of the costal margin, forming a large, irregular, yellow area.

\*\* The discal spots of the forewing are entirely separated from the spot of the discal cell.

§. The yellow spot of the hindwing above is situate behind the apex of the discal cell. The base of the wing and the discal cell are therefore quite black. Small species, expanse about 20 mm.

*A. parva.*

§§. The yellow or white spot of the hindwing above is very large and covers both a part of the discal cell and the base of area 1 c. Expanse of wings: 26 to 32 mm.

1. Hindwing beneath quite light yellow or at the margins more or less darkened. Fringes yellow.  
*A. pardalinus.*

2. Hindwing beneath snow-white. Fringes blackish. *A. dispar.*

β. Hindwing above yellow, only at the costal margin as far as vein 7 black. *A. amena.*

B. Hindwing above unicoloured blackish-brown without markings.

α. Hindwing beneath blackish with distinctly defined light yellow spots and thinly speckled with yellowish scales. Expanse of wings: 20 to 23 mm. *A. rhadama.*

β. Hindwing beneath of a monotonous brownish yellow or greyish yellow without any marking or with indistinct pale yellow spots. Forewing above with 1 or 2 spots in the discal cell and discal spots at least in 2 and 3. Expanse of wings: about 27 mm.

\*. Hindwing beneath with dull yellow spots. *A. cariate.*  
*A. bernieri.*

\*\*. Hindwing beneath greyish-yellow without spots. *A. mirza.*

*coroller.*

**A. coroller** *Bsd.* Wings above black with an orange-yellow marking. Forewing above at the costal margin almost from the base to vein 9 with a yellow stripe covering also the anterior longitudinal half of the discal cell and uniting with a square spot at the apex of the cell; this spot touches the discal spots in 2 and 3, which are contiguous to the spots in 1 b and 4; a separate yellow subapical spot in 5 to 8. Hindwing above in the centre with a large yellow area composed of large discal spots of the areas 1 c to 5 and also penetrating more or less into the apex of the discal cell. Forewing beneath almost quite brownish-yellow, only in 1 a and 1 b with a black ground-colour and with black submarginal spots in 2 to 7, the two former being large, the others punctiform. Hindwing beneath yellow with indistinct dark spots in the basal part and blackish discal streaks behind the centre in 1 c to 7. Vein 5 of the forewing is not quite straight, the antennae are somewhat longer than in the other species, and besides the marking is also different. I can therefore consider *coroller* to be merely a deviating species of *Ampittia*. The antennal club, however, is short with an obtuse yellow tip.

*parva.*

**A. parva** *sp. n.* Wings above black with golden yellow markings. Forewing above before the discal cell with a yellow stripe reaching to the apex of the discal cell but not to the costal margin itself; in the discal cell only a short longitudinal streak at the anal margin, opposite vein 2; the discal spots 1 b to 3 form a transverse spot outside of the apex of the discal cell; a yellow roundish subapical spot in (5) 6 to 8 is almost right in front of the discal cell. Hindwing above behind the centre with a yellow discal band in 1 c to 5, which does not penetrate into the discal cell. Forewing beneath black with the same yellow markings as above and besides with a yellow marginal band between the apex and vein 3. Hindwing beneath yellow, in the centre of a deeper yellow, with black marginal spots in 1 c to 7, discal spots in 1 c, 2 and 7, and some indistinctly defined black markings in the basal part. Last palpal joint long, porrect, roughly scaled. Usambara: Mombo (Sjöstedt). It strongly recalls the ♂ of the Indian *A. maro* *F.* (Vol. I, pl. 87 d), but it is still smaller and has a different under surface of the hindwing. The ♀ is unknown to me.

**A. pardalina.** In all the forms of this species the forewing above is black with a yellow spot in the discal cell and two groups of yellow discal spots, one in 2 and 3 and one before the apex in 6 to 8 or at least in 6 and 7. Hindwing above with a large orange central area. Madagascar. — **pardalina** *Btlr.* Forewing on both sides with a small discal dot near the margin in area 5 and with a subcostal dot in 10. The spot in the discal cell is transversely cut off towards the base. — **labordei** *Oberth.* only differs by the spot of the discal cell being at the anal margin extended into a yellow streak almost reaching to the base. — In **sacclavus** *Mab.* the discal spot 5 of the forewing is absent, but not the dot in 8. — **gallieri** *Oberth.* only differs from *sacclavus* by the absence of the discal dot 8 of the forewing. — In all the forms the hindwing beneath is yellow, but all round more or less darkened or with a dark longitudinal streak in 1 c and dark submarginal spots.

*dispar.*

**A. dispar** *Mab.* is distinguished by the snow-white under surface of the hindwing. Forewing only with 4 or 5 small spots or dots, one in the discal cell and one each in 2, 3, 6 (and 7), of which only those in 2 and 3 are contiguous. The central spot of the hindwing above is brimstone-coloured in the ♂, white in the ♀. Madagascar. — **disparitis** *Oberth.* seems only to differ by the costal margin of the forewing beneath at the base being broadly white and the large yolk-coloured (♂) or white (♀) central spot of the hindwing above being somewhat smaller and more rounded off. Madagascar.

*amena.*

**A. amena** *Gr.-Sm.* is unknown to me. Forewing above dark brown with a large yellow macula covering the costal margin and the discal cell almost to the base and extending also behind and outside of the discal cell as far as vein 2; a yellow subapical transverse streak and a yellow dot behind it nearer at the margin.



„The under surface as above, except the whole apex of the wing being broadly yellow. Hindwing quite yellow, at the costal margin speckled black.“ Madagascar.

**A. rhadama** Bsd. (78 b). Wings above blackish-brown; hindwing spotless; forewing with small yellowish discal dots in 1 b to 3, 6 to 8, and generally also with such a dot in the discal cell, beneath at the costal margin and at the apex brown or yellowish. Madagascar. *rhadama*.

**A. bernieri** Bsd. (78 c). The discal spot 3 of the forewing is small, nearer to the margin than the spot in 2 and separated from it. Hindwing beneath dark yellow, dusted with blackish, and with some rounded or square, indistinct dull yellow spots. Madagascar. *bernieri*.

**A. cariate** Hew. (78 b) is very similar to *bernieri*, but the forewing with a discal spot also in 1 b, and the discal spots 2 and 3 touching each other. Hindwing beneath more brownish-yellow, but otherwise spotted as in *bernieri*. Madagascar. *cariate*.

**A. mirza** Mab. only differs above from the two preceding species by the discal spots 2 and 3 of the forewing being more removed towards the margin and being situate almost directly behind each other. Hindwing beneath greyish-yellow without spots. Madagascar. *mirza*.

## 2. Genus: **Heteropterus** Dum.

The following Ethiopian species are better ranged in this genus than in any other having hitherto been established. MABILLE places three of them (*lepeletieri*, *tsita*, and *inornatus*) to *Leptalina*; but as the posterior tibiae of *Leptalina* have but two spines, whilst those of the said species exhibit 4, they cannot be placed to this genus. They are at once discernible from *Cyclopides* by the separately running vein 11 of the forewing. Amongst themselves the species differ somewhat by the length of the antennae and the formation of the antennal club.

### Review of the Species.

- I. Discal cell of forewing on both sides without any markings. Both wings above blackish-brown without markings.
  - A. Fringes of the wings not spotted dark at the ends of the veins.
    - α. Hindwing beneath from the base to the margin with two white longitudinal lines, one in 1 c, the other in the discal cell and above vein 5. Forewing also beneath without markings.
      - \*. The two longitudinal lines of the hindwing beneath broad and very distinctly prominent. *H. lepeletieri*.
      - \*\*.. The two longitudinal lines of the hindwing beneath fine and rather indistinct; the veins between them often whitish. *H. tsita*.
    - β. Hindwing beneath without white longitudinal lines.
      - \*. Wings beneath without spots or only with one grey discal dot and some small, whitish discal dots. *H. inornatus*.
      - \*\*.. Forewing beneath without spots. Hindwing beneath with a darker nebulous spot at the cell-end and a discal nebulous band. *H. niangarensis*.
  - B. Fringes of the wings spotted black at the ends of the veins. Forewing beneath with black marginal spots between the whitish ends of the veins, and a grey discal line being angularly broken at vein 5. Hindwing beneath blackish-grey with four very fine bent grey transverse lines. *H. abjectus*.
- II. Discal cell of forewing at the apex with 1 or 2 white dots.
  - α. Fringes of the wings light with dark spots at the ends of the veins.
    - \*. Forewing above uni-coloured black without markings or only with 2 or 3 minute white subapical dots and some discal dots. Hindwing above uni-coloured black without spots, beneath with a light yellow ground-colour and black markings. *H. anomaeus*.
    - \*\*.. Forewing above with a complete, in area 5 broken row of white discal dots (in 1 b to 8).
      1. Hindwing above without spots, uni-coloured black. Forewing beneath at the costal margin and in the discal cell, and hindwing beneath everywhere with a yellowish ground-colour and black veins. Hindwing beneath with large white, black-ringed discal spots in the areas 1 c to 7; the spot in 1 c is double. *H. stellatus*.
      2. Hindwing above with some small white discal spots near the costal margin. Both wings beneath with a grey ground-colour. Hindwing with light veins, small white discal spots and similar crescentiform marginal spots. *H. punctulatus*.

- β. Fringes of the wings without dark spots at the ends of the veins. Discal spots of the forewing white, complete (in 1 b to 8), nearing the margin and almost parallel to it. Hindwing above with 5 or 6 small white discal dots. Forewing beneath as above, but with whitish-yellow marginal streaks at the veins. Hindwing beneath with distinctly prominent light yellow veins and 8 whitish discal dots. *H. wallacei*.

<i>lepeletieri</i> .	<b>H. lepeletieri</b> <i>Latr.</i> (= <i>romi Robbe</i> ) (77 k). South Africa to Congo and Ruwenzori.
<i>tsita</i> .	<b>H. tsita</b> <i>Trim.</i> (? = <i>monochromus Mab.</i> ) (77 k). Cape Colony to Transvaal.
<i>inornatus</i> .	<b>H. inornatus</b> <i>Trim.</i> (77 k). Cape Colony to Zulu Land.
<i>niangarensis</i> .	<b>H. niangarensis</b> <i>Holl.</i> North-Eastern Congo District.
<i>abjectus</i> .	<b>H. abjectus</b> <i>Snell.</i> (= <i>furvus Mab.</i> ; <i>uniformis Karsch</i> ). Sierra Leone to Congo.
<i>anomaeus</i> .	<b>H. anomaeus</b> <i>Plötz</i> (77 k). Palpi beneath yellowish. The peculiar marking of the hindwing beneath is to be seen from the figure. Gold Coast: Aburi.
<i>stellatus</i> .	<b>H. stellatus</b> <i>Mab.</i> (= <i>mineni Trim.</i> ) (78 a). East Africa: Manica Land to Mombassa.
<i>punctulatus</i> .	<b>H. punctulatus</b> <i>Butl.</i> (77 a). Congo District and on the Tanganyika.
<i>wallacei</i> .	<b>H. wallacei</b> <i>Neave</i> (78 a). Rhodesia.

### 3. Genus: **Cyclopides** *Hbn.*

Distinguished from all the other genera by vein 11 of the forewing being fused with vein 12 for a long distance. Wings invariably above with a blackish-brown ground-colour.

#### Review of the Species.

##### I. Hindwing beneath without a white longitudinal streak on a dark ground.

##### A. Hindwing beneath with a blackish-brown or greyish-yellow ground-colour and similar veins.

- α. Both wings, or at least the forewing above with distinctly defined, bright yellow or orange spots.  
— *Metis*-group.

- §. Forewing with a yellow spot in the apex of the discal cell and at the costal margin in 9 and 10 generally with a similar spot which is often united with it; besides with yellow discal spots in 2 to 8 and often also in 1 b, forming three or four separate groups (in 1 b, 2 and 3, 4 and 5, 6 to 8); those in 4 and 5 are always much nearer to the margin than the others.

- +. Hindwing at least above with distinct yellow spots, a large discal spot in 4 and 5, a small one in 2, and a row before the margin.

1. Both wings above at the base black without a yellow spot or only at the costal margin of the forewing with yellow scales. The yellow spots of the upper surface are moderately large or small.

- a. Hindwing beneath dark brown and only with one small yellow dot near the base of the costal margin (♂) or with some dull reddish-yellow spots, corresponding to those above. *C. metis*.

- b. Hindwing beneath almost black, without spots (♂) or with dull reddish discal and submarginal spots. All the spots above are small. The discal spot 1 b of the forewing above is punctiform or absent altogether. *C. quadrisignatus*.

- c. Hindwing beneath greyish-yellow or pale brownish-yellow with dull yellow spots. The spots above are small and brownish-yellow. *C. malgacha*.

- d. Hindwing beneath at the costal margin and distal margin as far as vein 2 reddish-brown, at the hind-margin in 1 a, 1 b, and 1 c as far as the fold black, and otherwise in the centre blackish-grey; a basal spot in the discal cell, a very large discal spot in 4 and 5, reaching to the centre of these areas or somewhat projecting beyond the centre, and smaller discal spots in 1 c and 2 are whitish and are very prominently marked against the dark ground. The submarginal spots are situate in the brown marginal band and contrast but feebly with the ground-colour. *C. alticola*.

2. The usual yellow spots of the upper surface are larger; forewing besides with a yellow basal spot in area 1 b, and hindwing with an oblong yellow spot at the base.

*C. midas*.



++. Hindwing on both sides uni-coloured blackish-brown without spots. *C. kambove*.

§§. Forewing without a spot in the discal cell or in 9 and 10, and consequently only with discal spots. Hindwing beneath without spots, above with 3 or 4 yellowish submarginal spots.

1. The discal spots of the forewing as in the preceding species distributed among three, well separated groups (in 2 + 3, 4 + 5, 6 to 8). *C. trisignatus*.

2. The discal spots of the forewing form a coherent yellow transverse band between the veins 1 and 8. *C. depiens*.

β. Wings above uni-coloured blackish-brown without yellow spots or at most with traces of three small, yellowish subapical dots in 6 to 8 of the forewing. *C. aegipan*.

B. Hindwing beneath with a white ground-colour and distinctly prominent black veins. Forewing beneath with white or yellowish marginal spots or marginal streaks.

α. Hindwing beneath with orange-yellow basal, discal, and submarginal spots and thereby very variegated. — *Formosus*-group.

\*. The discal spots 4 and 5 of the forewing are small, nearing the margin, and together form a group entirely separated from the other discal spots.

1. Forewing with a yellow spot in the discal cell, connected with a costal spot in 9 and 10. *C. perexcellens*.

2. Forewing without a spot in the discal cell, beneath at the costal margin as far as the centre scaled yellow. *C. carsoni*.

\*\*. The discal spots 4 and 5 of the forewing are large and, with the other discal spots, form a coherent yellow transverse band, or they at least penetrate between the discal spots 3 and 6, touching them more or less.

§. Hindwing beneath with a complete row of orange-yellow submarginal spots (in [1 b] 1 c to 7). Forewing, at least above, without a yellow spot in the discal cell. *C. formosus*.

§§. Hindwing beneath without a submarginal spot in area 5.

1. Hindwing beneath with a reddish-yellow submarginal spot in area 4.

a. Forewing on both sides without a yellow spot in the apex of the discal cell and in area 2. The yellow spots of the upper surface are reduced. *C. tsadicus*.

b. Forewing with a yellow spot in the apex of the discal cell. The yellow spots above are large and all present. *C. cooksoni*.

2. Hindwing beneath without a reddish-yellow submarginal spot in area 4. *C. ogwanyi*.

β. Discal and submarginal spots of the hindwing beneath of the ground-colour and therefore only noticeable by their black border-lines. Discal cell of forewing without spots. Hindwing above without markings. Forewing often with very much reduced yellowish-white discal spots (generally in 3, 5, 6 to 8 distinct) and also above with whitish-yellow marginal spots. Posterior tibiae only with terminal spines. *C. willemi*.

II. Hindwing beneath blackish with two distinctly prominent white longitudinal streaks, one in the discal cell and one in 1 c.

α. Wings beneath with small triangular yellow marginal spots. Hindwing beneath at the hind-margin white. *C. meninx*.

β. Wings beneath without light marginal spots. Hindwing beneath at the hind-margin not white. *C. syrinx*.

**C. metis** L. (77 k). In the South African form (Cape Colony to Transvaal and Angola?) the ♂ hindwing beneath is quite uni-coloured dark brown without any traces of discal spots, only with a minute yellow spot at the base of the costal margin. — In the whole of East Africa as far as Mt. Elgon, there occurs a race **orientalis** *form. nov.* in which the ♂ hindwing is spotted reddish as in the ♀, but without a yellow spot at the base of the costal margin. *orientalis*.

**C. quadrisignatus** Btlr. only differs from *metis* by the marks stated in the review. Nyassa Land, Kilimandjaro. *quadrisignatus*.

**C. midas** Btlr. (= *xanthometis* Mab.) (77 b). Nyassa Land. *midas*.

**C. alticola** *sp. n.* scarcely differs above from *metis* and its race *orientalis*, but it has a different underside of the hindwing. Central Africa: Volcano of Birunga, and on Mt. Elgon in East Africa. Only ♂♂ are known to me. *alticola*.

**C. malgacha** Bsd. (= *limpopona* Wallengr.) is particularly recognizable by the lighter ground-colour of the hindwing beneath. Cape Colony to Transvaal. Madagascar. *malgacha*.

**C. kambove** Neave (77 i). Forewing almost entirely as in *metis*, but without a yellow stripe at the base of the costal margin, and beneath without such a stripe in the discal cell. North Rhodesia. *kambove*.

- tresignatus*. **C. trisignatus** Neave. Uganda.
- decipiens*. **C. decipiens** Btlr. Although the yellow discal transverse band of the forewing is entirely shaped as in *C. formosus*, this species belongs to the preceding species and entirely differs from the *formosus*-group by the uni-coloured under surface of the hindwing. Nyassa Land. — *abscissa*. **C. abscissa** Gaede only differs by the discal spot 1 b of the forewing being absent and the yellow spots of the hindwing above being rather indistinct. East Africa: Kigonsera.
- perexcellens*. **C. perexcellens** Btlr. Hindwing beneath with yellow discal spots in 1 c, 2, 4 to 7, and submarginal spots in 1 b to 5 and besides with some yellow basal spots; above only with indistinct discal (2) and submarginal (5 or 6) spots. Forewing beneath with a coherent marginal band parted by the black veins. Nyassa Land.
- angolanus*. — **C. angolanus** Btlr. deviates by larger yellow spots and by 2 spots in the discal cell of the forewing. Angola.
- carsoni*. **C. carsoni** Btlr. is unknown to me. We state the following from the description: fringes of the hindwings spotted dark brown; forewing beneath in the basal half with a yellow stripe at the costal margin, but without a spot in the discal cell; hindwing beneath cream-coloured with a slight silvery lustre; veins and marginal line, but not the hind-margin, black; the yellow spots as in *perexcellens*. Expanse of wings: 34 mm. Fwambo on the Lake Tanganyika.
- formosus*. **C. formosus** Btlr. (78 a). Palpi orange-yellow. Matabele and Nyassa Land.
- tsadicus*. **C. tsadicus** Auriv. Palpi grey. The yellow markings above are reduced by the absence of the discal spot 2 on the forewing, whilst that in 3 is shorter. Lake Tsad.
- cooksoni*. **C. cooksoni** H. Drc. (78 a). Rhodesia.
- ogwanyi*. **C. ogwanyi** B.-Bak. is probably only a local race of *cooksoni*. Uganda.
- willemi*. **C. willemi** Wallengr. (= *cheles* Hew.) (78 a, b) differs from all the other species of this genus by the under surface of the hindwing. Damara Land, Transvaal and Somali Land.
- meninx*. **C. meninx** Trim. (= *argenteostriatus* Plötz) (78 a). The posterior tibiae, according to TRIMEN, exhibit in this species only terminal spines. Natal and Transvaal.
- syrinx*. **C. syrinx** Trim. (78 a). Both wings above with small, indistinctly defined, dull, light yellowish spots and at the base strewn with yellowish scales. Forewing beneath at the costal margin and at the apex yellowish-brown. Hindwing beneath with a yellowish-brown ground-colour. Cape Colony, on the summits of mountains.
- aegipan*. **C. aegipan** Trim. (78 a). Above uni-coloured dark brown and very similar to the species of *Heteropterus*; before the apex of the forewing generally three oblong, dull yellow-scaled subapical spots in 6 to 8, which are often more distinct on the under surface, but may also be absent there. Beneath the hindwing and forewing are dark yellowish-brown at the costal margin and apex; the hind-margin of the hindwing, however, is darker blackish in 1 a and 1 b. Vein 11 of the forewing, at least in the specimen lying before me, is only for a short distance fused with vein 12. The posterior tibiae in my specimen exhibit 4 spines (according to TRIMEN there occur only terminal spines). Cape Colony to Transvaal and Mashona Land. This species also occurs only on mountains.
- argenteogutta*. **C. argenteogutta** Btlr. (78 b) I have not been able to examine. Judging from the different marking beneath it probably does not belong to *Cyclopides*. The forewing, according to BUTLER, shows above three irregular, slanting transverse bands, some submarginal dots and the fringes of a yellow colour. Hindwing above with a dot at the base, an irregular median band, three submarginal dots and the fringes of a yellow colour. Body black. Nubia.

We may finally mention here a species described by FR. WALKER in the year 1870 from Hor Tamanib in Nubia on the Red Sea, **C. phidyle**, which was hitherto not ranged and probably does not belong to *Cyclopides*. The description says: ferruginous-brown; head anteriorly and abdomen beneath yellowish; fringes grey, at their base brown; forewing: a darker irregular band is exteriorly rounded, squat and sending forth a longitudinal stripe there; it is united with a short anterior band, which is expanded at the costal margin; a darker marginal band; in the centre some white hyaline spots arranged in three groups; the first group of 1 or 2 dots nearer to the base than the second which is transverse and composed of 2 or 3 dots; the third group between the two others, but much more remote from the costal margin and formed of a spot and a dot. Hindwing with three darker bands formed of spots and with a coherent marginal band. Wings beneath yellowish; forewing with a brown spot in the centre and outside of it with two irregular bands, the first of which is broader than the second which runs along the margin. Hindwing with three irregular bands composed of brown spots. Expanse of wings: 1 inch 5 lin.



#### 4. Genus: **Oxypalpus** Wts.

Vein 2 of the forewing rises from the centre of the cell. Veins 3 and 4 of the hindwing from the same place or in the ♂ often on a short fork.

#### Review of the Species.

A. Hindwing beneath without light longitudinal stripes between the veins.

α. Hindwing beneath without black dots or a transverse row of dark rings.

\*. Hindwing beneath uni-coloured light brownish-yellow, at most with a very fine, black marginal line and a dark longitudinal stripe in area 1 c; above for the greatest part orange. *O. ignitus*.

\*\*. Hindwing beneath in the centre and at the hind-margin dark brownish-red, at the base, costal margin, distal margin, and in 1 c black, above black with two fine reddish longitudinal rays from the base. *O. niger*.

β. Hindwing beneath with several black or brown dots, with dark rings or darker transverse bands.

\*. The discal and submarginal spots of the hindwing beneath are of the ground-colour, but in black rings and thereby very conspicuous. Forewing above without discal spots in 4 and 5, and without a yellow stripe at the base of the costal margin, in the discal cell with two small spots. *O. annulifer*.

\*\*. Hindwing beneath without ring-spots.

1. Hindwing beneath lighter or darker brownish-yellow with several brown or blackish dots and a triangular black marginal spot in 1 b. Of the dark dots one is at the base of area 7, 4 in a row transversely across the apex of the discal cell (2 in 1 c, 1 or 2 in the cell, and 1 in 7), and the others in a submarginal double row, 2 each in 1 c to 6. *O. biseriata*.

2. Hindwing beneath with two darker, indistinct transverse bands. *O. numa*.

B. Hindwing beneath with several whitish longitudinal stripes between the light yellowish veins. *O. harona*.

**O. ignitus** is a variable species the forms of which, however, are apparently not very strikingly distinct from each other. In the ♂ the hindwing above, at the base of the veins 2 to 4, shows a small mealy spot which is more or less covered by a yellow hair-pencil of the discal cell. Forewing above at the costal margin beginning from the centre, at the apex and distal margin broadly black, besides with black stripes in the discal cell, a coniform black spot in 4 and 5 behind the cell-apex, and more or less developed black longitudinal rays in 1 a and 1 b proceeding from the marginal band. In the ♀ the yellow markings of the forewing are very much reduced and only form a narrow irregular discal band in 1 b to 8 and coherent with it a longitudinal stripe at the costal margin as far as the base. **ignitus** Mab. (♂ = *pyrosa* Plötz; ♀ = *ignitus*, *gisgon* Mab.) (77 e). The mealy spot on the hindwing above is of the ground-colour, not darkened. Forewing above with strongly developed black markings, but beneath without a black mealy spot behind the centre of vein 1, only at the base and at the anal margin in 1 a beyond the centre narrowly black. Sierra Leone to Ogowe. — **wollastoni** Heron. ♂. The mealy spot of the hindwing above is more or less darkened by *wollastoni*, intermixed black scales. Forewing above with somewhat smaller black markings, beneath at least with traces of a black spot behind the centre of vein 1. Cameroon. Ruwenzori. — **fulvus** Lathy (77 f). ♂. Hindwing above *fulvus*, with a distinct black mealy spot. The black markings of the forewing above are still smaller. Forewing beneath with an oblong black spot behind the centre of vein 1. Nigeria. Ituri.

**O. niger** H. Drc. (77 e). Forewing above uni-coloured brownish-black, beneath with brownish-red *niger*, spots (see the figure). Congo District on the Kassai River.

**O. annulifer** Holl. (77 d). The figure makes the description superfluous. Gabon: Ogcwe Valley. *annulifer*.

**O. biseriatus** Mab. (= *zimbazo* Tr., *icteriana* Strd.) (77 i). The excellent description by MABILLE *biseriatus*, proves that his *Pamphila biseriata* (which he did not even later on examine precisely and which is placed to *Pardaleodes* in Genera Ins.) is quite surely identical with *zimbazo* Trim. *P. icteria* Mab. was hitherto united with this species, but STRAND is correct in saying that the description of *icteria* does not fit to *zimbazo*. The species is easily ascertained by the figure and the review of the species.

**O. numa** Drc. was described as a *Parosmodes*, but compared with *icteria* Mab. (presumably *biseriatus*). *numa*. As I could not examine the species, I must consider its generic position to be uncertain. According to the description, the body is above black, beneath greyish-brown like the legs. Forewing black; a yellowish-brown spot at the end of the discal cell and another more towards the margin at the costal margin; from this spot

a row of smaller spots extends to the anal margin. Hindwing black with a small yellowish-brown spot at the apex of the discal cell and then with a broad yellowish-brown transverse band from the anal angle almost to the „proximal margin“ (sic!; presumably costal margin?). Fringes yellow. Forewing beneath almost as above, but browner. Hindwing beneath red-brown with two indistinct, more reddish transverse bands between the costal margin and hind-margin; the surface of the wing is slightly speckled with small reddish spots. ♀ very similar to the ♂, but more blackish. East Africa: Daressalaam.

- harona*. **O. harona** Westw. (= *merops Weym.*) differs from all the other species in the under surface of the hindwing. In the type the yellow markings of the upper surface are very extensive. Forewing above at the base only as far as vein 2, at the anal margin in 1 a, at the distal margin in a width of about 2 mm, and at the costal margin very narrowly black; besides with a black longitudinal streak in the discal cell and, separated from it, with a coniform black spot in 4 and 5. Hindwing above only at the margins black.
- ruso*. Matabele Land; Rhodesia; East Africa. — **ruso** Mab. (77 e), as the figure shows, only differs by the black colouring above being much more extensive. It flies in the same districts as the type and is presumably a seasonal form of it.

### 5. Genus: **Teinorhinus** Wts.

It only differs from *Oxypalpus* in the apex of the forewing being more rounded off and in the ♂ lacking the mealy spot of the hindwing.

- watsoni*. **T. watsoni** Holl. (77 f) is sufficiently characterized by the figure. Gabun. HEWITSON in his collection mistook this species for *Dalla diraspes* from Rio de Janeiro.

### 6. Genus: **Prosopalpus** Holl.

This genus comprises but two small black species, which I was unable to examine. The second palpal joint is very long porrect, with half its length projecting beyond the frons, and the third joint is also long, porrect, pointed and almost bare. Vein 5 of the hindwing is distinct, the veins 1 a and 1 b bent.

- duplex*. **P. duplex** Mab. (77 i). Wings above black, beneath before the margin with one or two transverse rows of grey dots. Sierra Leone.

- debilis*. **P. debilis** Plötz (77 i). „Blackish-brown, above quite plain, beneath all the wings exhibit a dull lilac central dot and close behind it a similar, bent transverse band only crossed by the dark veins, also a fine marginal line of the same colour; the forewing besides below the apex with 5 submarginal dots. Antennae  $\frac{3}{4}$  the length of the forewing.“ Length of forewing: 12 mm. Cameroon. Figured from PLÖTZ' original figure.

### 7. Genus: **Acleros** Mab.

Small, closely allied and indistinctly defined species which are almost invariably recognizable by the long, thin and pointed terminal joint of the palpi (only in *placidus* this terminal joint is shorter and thicker, more coniform), by the abdomen being white at or before the apex, and by the white fringes of the hindwings. In the ♂♂ the forewing above is uni-coloured black or at least with traces of grey spots, whereas in the ♀♀ there generally occur 2 or 3 white or whitish discal spots in 1 b, 2 (and 3), rarely also two dots in the discal cell. The hindwing beneath shows a peculiar, interwoven marking consisting of striae and indistinct scaled spots on a lighter ground.

### Review of the Species.

- A. Forewing beneath at the posterior margin dark coloured, slate-coloured or blackish, at most with a white marginal spot at the posterior angle.

- α. Forewing beneath with a white marginal spot in 1 a and 1 b and before it with a whitish, dark striated marginal band as far as vein 6 or 7. Hindwing beneath white with black striae which are more densely arranged at the costal margin and in the centre from the hind-margin to vein 4. *A. sparsus*.

- β. Forewing beneath without a white marginal spot at the anal angle.

- \*. Hindwing beneath without a broad dark marginal band or only with darker spots.

1. Smaller species; expanse of wings about 23 mm. Hindwing above at the margin in 1 b to 2 broadly white (about 2 mm). *A. leucopygus*.



2. In the ♀ (♂ unknown) the hindwing beneath is almost monotonously greyish brown with a white central spot and whitish, dark-pupilled marginal spots between the veins in 1 b to 3. *A. kasai*.

\*\* Hindwing beneath with a broad, dark, inwardly often somewhat bulging marginal band reaching to the base of veins 3 and 4 and being very sharply defined towards the whitish median band; at the centre of the margin between the veins 2 and 6 it is more or less brightened up by grey scales. *A. mackeni*.

B. Forewing beneath at the posterior margin broadly white or whitish.

α. Hindwing beneath in the marginal half with a broad, dark, inwardly often convex marginal band which is lighter in the centre of the margin.

\*. Forewing without subapical dots in 6 to 8. *A. plötz*.  
*A. instabilis*.

\*\* Forewing with white subapical dots in 6 to 8. *A. olaus*.

β. Hindwing beneath without a darker marginal band, nearly everywhere uniformly marked.

\*. Hindwing beneath white with dark striae and transverse lines. *A. substrigatus*.

\*\* Hindwing beneath blackish-grey, densely and almost uniformly strewn with greyish-blue scale-spots. Last palpal joint short, coniform. *A. placidus*.

**A. sparsus** H. Drc. (77 b). Hindwing above at the margin narrow white. ♀ unknown. Cameroon. *sparsus*.

**A. leucopygus** Mab. (? = *minusculus* Rbl.) was described from Madagascar, but according to HAM. *leucopygus*. DRUCE it is said also to occur on the African Continent, and is probably the same species as *minusculus* Rbl. REBEL describes his species as follows: „Allied to the preceding species (*mackeni*), but much smaller and on the hindwing along the margin before and in the anal angle with white spots proceeding from the white fringes. Beneath the wings are lighter than in *mackeni*, particularly the bluish-white, brown-speckled hindwing entirely lacks the band-like darkening before the margin. Length of forewing 11 mm.“

**A. kasai** H. Drc. Wings above blackish-brown. Forewing with two white dots in the apex of the discal cell, white discal spots in 2 and 3 and white subapical dots in 6 to 8. Hindwing also above with a white central spot. Forewing beneath almost as above with a large, eleft, white discal spot in 1 b. Congo District: Kassai. — **dualensis** Strd. only differs in the light central spot of the hindwing above being absent *dualensis*. and the forewing only showing one subapical dot (in 6). Cameroon: Duala.

**A. mackeni** Trim. (77 a). Forewing in the ♂ above without distinct discal spots, in the ♀ generally with whitish discal spots in 1 b and 2. Hindwing above uni-coloured black with white fringes or behind the centre at the margin narrowly white. Natal to Angola and Kilimandjaro. — **nyassicola** Strd. is said to differ by yellowish discal spots of the forewing, and on the hindwing beneath by the basal area being densely dusted with ochreous-brownish scales. Nyassa Land. — **aurifrons** Strd. ♀. Forewing above with three discal spots (in 1 b to 3) which are connected with each other or only separated by the veins, and with three small subapical dots in 6 to 8. In the ♂ the forewing only shows 2 indistinct discal spots and no subapical dots. Nyassa Land.

**A. plötz** Mab. (77 a) is easily recognized by the sharply marked under surface. In the ♀ the forewing shows a white dot in the discal cell and one discal spot each in 1 b and 2. Gold Coast to Congo.

**A. instabilis** Mab. (77 b) is closely allied with *plötz*, but somewhat larger and, as the figure shows, with a much lighter under surface. East Africa.

**A. olaus** Plötz (77 b) only differs from *plötz* by the marks mentioned in the review. West Africa from Togo Land to Loango. *olaus*.

**A. substrigatus** Holl. (77 a). Cameroon and Gabun.

**A. biguttatus** Mab. is unknown to me. „♂. Black above without spots; fringes of forewings whitish-grey, of hindwings white, wings beneath greyish-blue. Forewing at the anal margin with a large white triangular area. Hindwing strewn with white scales, and with two fine white longitudinal rays at the hind-margin. — ♀ similar to the ♂, but on the forewing above with two small white spots in 1 b and 2.“ Expanse of wings of the ♂ 17 mm. Sierra Leone. *substrigatus*. *biguttatus*.

**A. placidus** Plötz (77 a) differs, if I am not at fault, from all the other species in the short terminal joint of the palpus and ought perhaps to be regarded as the type of a separate genus. The hindwing is sometimes quite black, sometimes at the margin narrowly and irregularly white. In the ♀ the forewing shows two dots in the discal cell and small white discal spots in 1 b and 2. Gold Coast to Cameroon. — **displacidus** Rbl. is said to differ from *placidus* merely „in the white colouring of the fringes invading the surface of the hindwing“. There occur, however, intermediate stages between this form and the form with quite black hindwings. Central Africa, in the primeval forest. *placidus*. *displacidus*.

8. Genus: **Hypoleucis** Mab.

Antennal point long, bent down, more than twice the length of the diameter of the club. Palpi densely, almost smoothly scaled; terminal joint short knob-shaped. Vein 5 of the forewing much nearer to 4 than to 6, vein 2 almost from the centre of the cell. Vein 5 of the hindwing feebly developed.

Forewing with two hyaline spots in the discal cell and 8 discal spots, of which those in 1 b to 5 are arranged in an almost straight line pointing towards the apex of the wing, whilst the subapical dots in 6 to 8 are situate more towards the base. Only two species.

*tripunctata*.

**H. tripunctata** Mab. (= titanota Karsch) (77 c). Hindwing above only with 3 or 4 small white discal spots (in 2 to 5) and at the anal angle of a lighter whitish colour; fringes from the anal angle to vein 6 snow-white; beneath of a pure white with black, triangular marginal spots in 1 b to 5 and a broad black costal-marginal band almost reaching to vein 6 and often enclosing 2 or 3 white dots. Togo Land to Gabun.

*ophiusa*.

**H. ophiusa** Hew. (77 d). Forewing on both sides almost as in the preceding. Hindwing above with an almost straight transverse row of 6 white discal spots (in 1 b to 5), but not lighter at the anal angle; beneath with the same sharply defined discal spots and also with similar ones in 6 and 7; the surface of the wing within the discal spots almost entirely clothed with white scales, the costal and distal margins outside of the discal spots, however, entirely or for a great part blackish-brown.

9. Genus: **Gorgyra** Holl.

This genus is distinguished by the thick and comparatively long, porrect terminal joint of the palpus. Vein 5 of the forewing is distinctly nearer to 4 than to 6. — The forewing is peculiarly marked by two hyaline spots in the apex of the discal cell, situate in a straight transverse line with the hyaline spot in 2. The hindwing above almost invariably shows a hyaline spot in the discal cell and one each in 2 and 3, whilst beneath these hyaline spots are encircled with black and the other discal spots are quite black or with light pupils.

## Review of the Species.

A. Forewing above with two small hyaline spots or hyaline dots in the apex of the discal cell right above each other.

α. Hindwing above with hyaline spots in 2 and 3 and also with a hyaline spot in the discal cell. Forewing with white subapical dots in 6 to 8.

\*. Forewing also in area 4 with a distinct hyaline spot. Hindwing beneath with a dark grey ground-colour and blackish discal and submarginal spots. *G. afikpo*.

\*\*. Forewing without a hyaline spot in area 4.

§. Fringes of the hindwing entire, spotless. Abdomen above at the apex white. Hindwing beneath with a dark ground-colour. *G. aburae*.

§§. Fringes of the hindwing black speckled with white. Abdomen above as far as the apex dark. Hindwing beneath with a yellowish ground-colour.

1. Hindwing beneath almost everywhere with a greenish-yellow or greyish-yellow ground-colour, only at the anal angle more darkened. *G. mocquerysi*.

2. Hindwing at the base, costal and hind-margins broadly light yellow and almost spotless (except a dark spot at the centre of the costal margin), between them greyish-brown with dark spots. *G. aretina*.

β. Hindwing above without hyaline spots in 2 and 3.

\*. Hindwing above with a small hyaline spot in the discal cell, beneath partly yellow or ferruginous-yellow. *G. subfacata*.  
*G. vosseleri*.

\*\*. Hindwing above without or with a very indistinct white spot in the discal cell, beneath with a dark, never yellowish ground-colour.

§. Smaller species with an expanse of the wings of about 20 to 25 mm. Hindwing beneath without white markings. *G. johnstoni*.  
*G. minima*.

§§. Larger species, about 30 mm. Hindwing on both sides with an irregular white marginal band. *G. indusiata*.



B. Forewing above in the discal cell with but one small hyaline spot at the anal angle. Hindwing above without a spot in the discal cell, but with two triangular hyaline spots (in 2 and 3), beneath with a straw-coloured ground-colour. Forewing only in 1 b, 2, 3, and 6 with small light discal spots. *G. subflavida*.

**G. afikpo** *H. Drc.* (77 d) is somewhat larger than the other species and differs from all by the discal spot in area 4 of the forewing. The figure shows the marking beneath. Cameroon and Gabun.

**G. aburae** *Plötz* (77 b, 79 c). The spots in the discal cell and the discal spots 2 and 1 b of the forewing above are in this species in a straight line. Gold Coast to Gabun. — **diversata** *Holl.* only deviates from the type by its lighter under surface. Ogowe Valley.

**G. mocquersyi** *Holl.* (77 c). The discal spot 1 b of the forewing is situated much more towards the base than the discal spot 2. Hindwing beneath with small black marginal spots and three black dots in area 7. French Congo.

**G. aretina** *Hew.* (= *dolus* *Plötz*) (77 c) is the most easily recognizable by the under surface of the hindwing. Togo Land to Gabun.

**G. subfacata** *Mab.* (77 b). This species also differs from the other species by the marking beneath. The apex of the abdomen is not white as it is incorrectly set forth in *HOLLAND*'s figure.

**G. vosseleri** *Grünb.* (77 c) is unknown to me, but according to the figure of the underside it can probably be ascertained. ♂. Forewing above only with three hyaline spots, 2 in the apex of the discal cell and one in area 3. The ♀ besides shows there a discal spot in 1 b and 2 or 3 small subapical dots in 6 to 9. East Africa near Amani.

**G. johnstoni** *Bth.* (77 b). Forewing above with 6 small hyaline dots, 2 in the discal cell and one each in 2, 3, 6 and 7, beneath besides with a fine white longitudinal streak at the anterior edge of the discal cell and a discal spot in 1 b. Hindwing above spotless, beneath coloured dark with a dark brown band and a violettish-grey longitudinal stripe at vein 1 b. British Central Africa and Gabun.

**G. minima** *Holl.* (77 c) is extremely similar to *johnstoni*, but still somewhat smaller and with a somewhat different under surface, both wings showing rounded dark submarginal spots, without a white longitudinal streak in the discal cell of the forewing. French Congo.

**G. indusiata** *Mab.* differs rather considerably from the other species. Forewing above black with 7 small hyaline dots, 2 in the discal cell, a somewhat larger one in 2 right behind those of the cell and one each in (1 b) 3, 6, 7, 8, which are also situate almost in a transverse line, beneath somewhat lighter, at the costal margin yellowish, before the apex lighter grey, and in 1 b with a large whitish diffuse spot; fringes grey. Hindwing above black without hyaline spots, but with a white, about 2 mm broad, interiorly dentate marginal band between the anal angle and vein 6; fringes long and white. Cameroon.

**G. subflavida** *Holl.* (77 b) is easily ascertained by the review and figure. East Africa: Usagara.

#### 10. Genus: **Oedaloneura** *Mab.*

Only different from *Gorgyra* by vein 2 of the forewing and the adjoining part of the median being expanded into two adjoining, lustrous white vesicles. Palpi horizontally porrect. The only species is not lying before me. The peculiar thickening of vein 2 and of the median on the forewing probably occurs only in the ♂.

**Oe. heterochrus** *Mab.* exactly corresponds with *Gorgyra aburae* (77 b) in the size, shape of wings and macular marking on both wings, and only differs by the hindwing being on both sides at the proximal margin broadly whitish; hindwing otherwise beneath with a yellowish ground-colour, the forewing beneath being also yellowish at the costal margin and apex. In *MABILLE*'s figures there is nothing whatever to be discovered of the swollen veins of the forewing. They may be ♀♀? West Africa.

#### 11. Genus: **Gastrochaeta** *Holl.*

Closely allied with *Gorgyra* and only different by the somewhat shorter point of the antennal club, the short, erect terminal joint of the palpus, and in the marking by the hyaline spot 2 of the forewing being more removed towards the margin. The hyaline spots are otherwise the same as in *G. aburae* (77 b).

#### Review of the Species.

A. Forewing with a small hyaline spot in area 4 being situate in a line with the hyaline dots in 6 to 8. Hindwing above with a hyaline spot in the discal cell and two or three not transparent whitish discal spots in 2 to 4. *G. meza*.

B. Forewing without a discal spot in area 4. Hindwing above with three hyaline spots, one in the discal cell and one each in 2 and 3.

α. Hindwing beneath yellowish with a dark marginal band. *G. mabillei*.

β. Hindwing beneath blackish-grey and on both sides with hyaline spots also in 2 and 3. *G. cybeutes*.

*meza*. **G. meza** Hew. (= *batea* Plötz, *bubovi* Karsch). The subapical dots of the forewing are all small, punctiform, and situate in a straight line. Hindwing beneath dark brown with two still somewhat darker transverse bands, one at the base, very broad, and one behind the centre; the discal spots above in 2 to 4 are here yellowish-brown and rather indistinct, in the centre and at the margin the ground-colour is more or less strewn with violettish-grey scales. Togo Land to Angola.

*mabillei*. **G. mabillei** Holl. (77 d) is above very similar to the following species, but it differs by the light ground-colour of the hindwing beneath; the latter shows two black longitudinal streaks from the base to the hyaline spot of the discal cell, a black basal dot in 7 and some small dark discal dots, generally one each in 1 e, 4, 5, and 7. Ogowe Valley.

*cybeutes*. **G. cybeutes** Holl. (77 d). The subapical dot 6 of the forewing is somewhat larger and nearer to the margin than the two others. The hindwing beneath is blackish-grey and beside the hyaline spots it shows white basal dots in 1 c (and 7), some white discal spots (at least 2) in 1 e, and a whitish marginal spot in 1 b. *pallida*. Cameroon and French Congo. — **pallida** Holl. Hindwing beneath lighter with indistinct markings.

The species of the following two genera are only known to me from the descriptions and figures. They are large or of medium size and very strongly built, with a stout body, and only occur in Madagascar. One species described by TRIMEN from East Africa probably does not belong hereto. They were formerly ranged among the genus *Trapezites* only known from Australia, but MABILLE in dealing with the *Hesperidae* in „Genera Insectorum“ distributes them among the two following new genera. As MABILLE's genera, as is stated in the review, are only distinguished by the formation of the posterior tarsi of the ♂, *fastuosus* and *empyreus* being placed to *Manorina*, but *catocalinus* and *carmides* to *Malaza*, it is impossible for me to distribute among MABILLE's genera the other species which are for the present placed by MABILLE to *Pardaleodes*, as well as those that were later on described as *Trapezites* by OBERTHÜR. I am therefore compelled to supply a conjoint review of all the species probably belonging to this division, and cannot decide upon their generic position.

#### Review of the Species hitherto described from Madagascar as „*Trapezites*“.

A. Hindwing above with two yellow transverse bands, one across the apex of the discal cell and one behind the centre. Forewing above either without spots or only with three small, entirely separated spots, one (being double) in the discal cell and one each in 2 and 3.

α. Hindwing beneath reddish-brown or violettish-brown without black spots. *Malaza* Mab.

\*. Hindwing beneath uni-coloured without spots. *M. catocalina*.

\*\*. Hindwing beneath in the centre with a large rounded silvery spot. *M. carmides*.

β. Hindwing beneath of a bright red with black spots at least at the base and before the margin, and with a black longitudinal streak in area 1 b, besides with 2 to 4 large yellow or whitish spots. — *Manorina* Mab.

\*. Hindwing beneath with two large yellow spots proximally and distally bordered by black dots. Expanse of wings about 35 mm. Forewing in the ♂ without spots, in the ♀ with three small yellowish spots. *M. empyrea*.

\*\*. Hindwing beneath with 4 large, roundish or angular silvery spots, one in the cell, one in 4 and 5 at the cell-apex, and two in 1 c, the exterior spot being double. Expanse of wings about 52 mm. Forewing spotless. *M. fastuosa*.

B. Hindwing above only with a yellow transverse band or without a marking, only in the centre and at the base with grey or yellowish hair. Forewing above with a yellow discal spot in 1 b and always with a double spot in the discal cell, and with discal spots in 2 and 3, which are contiguous or at least very close together.

α. Hindwing beneath without spots or only with indistinct dark dots or spots.

\*. Hindwing above with a well defined yellowish or yellow transverse band composed of distinct spots.

§. Hindwing beneath at the hind-margin lighter, of a whitish colour. Subapical dots of the forewing absent or only represented by one.

1. Ground-colour of the hindwing beneath yellowish. *T. (?) howa*.

2. Ground-colour of the hindwing beneath brown or greenish-grey. *T. (?) varians*.

§§. Hindwing beneath not lighter at the hind-margin. Forewing with three whitish subapical dots.



1. Hindwing beneath at the hind-margin darkened. *T. (?) malchus.*
2. Hindwing beneath everywhere with the same ground-colour.
  - a. Hindwing beneath with some black discal dots. *T. (?) paroechus.*
  - b. Hindwing beneath without distinct black dots. *T. (?) ismael.*
- \*\* . Hindwing above without real yellow spots, but along the centre and at the hind-margin more or less clothed with grey or yellowish hair.
  1. Hindwing: fringes yellow; under surface red-brown. *T. (?) gillias.*
  2. Hindwing: fringes light brown; under surface light yellow with ferruginous markings. *T. (?) chirala.*
- β. Hindwing beneath on the brown ground with large, sharply defined, white basal, discal and marginal spots; the latter are only separated by the brown veins. *T. (?) apostrophia.*

## 12. Genus: **Malaza** Mab.

**M. catocalina** Mab. (77 a). Forewing above without spots beneath at the posterior margin broad, *catocalina*, as far as the apex of the discal cell lighter whitish. Madagascar.

**M. carmides** Hew. (77 a) is well distinguished by the large white discal spot of the hindwing beneath *carmides*. Madagascar.

## 13. Genus: **Manorina** Mab.

**M. empyrea** Mab. has been sufficiently described in the review. Madagascar. *empyrea.*

**M. fastuosa** Mab. is closely allied to *empyrea*, but it differs by its larger size and the different under *fastuosa*. surface of the hindwing. Madagascar.

## 14. Genus: **Trapezites** Hbn.

As I could not examine the generic position of the following, evidently closely allied species, I am forced to leave them for the present in the genus in which they have been placed by HOLLAND.

In all the species the forewing exhibits a discal spot being above yellow or orange-yellow in 1 b, and 4 hyaline spots (2 often united ones in the discal cell and one each in 2 and 3); these 4 spots are generally, particularly in the ♀♀ contiguous or only narrowly separated. The subapical dots are rarely absent altogether and in the ♀♀ often larger and oblong.

**T. (?) howa** Mab. Transverse band of the hindwing above composed of several though little yellowish discal spots of the areas 2 to 5; fringes of hindwings greyish. Madagascar. *howa.*

**T. (?) varians** Oberth. is similar to the preceding species, but it has a smaller transverse band of the hindwing above composed of but one discal spot (in 4 and 5?), and a brown, in the areas 1 a to 1 c much lighter, yellowish ground-colour of the hindwing beneath. Madagascar. — **pallida** Oberth. only deviates by *pallida*. the lighter, greenish-yellow under surface of the hindwing. Madagascar.

**T. (?) malchus** Mab. (= ypsilon *Saalm.*). Forewing with three subapical dots (♂) or spots (♀). *malchus*. Hindwing with a moderately large, almost parted, yellow transverse band above and orange-yellow fringes. Madagascar.

**T. (?) paroechus** Mab. (79 f). Hindwing above with an oval yellow central spot (♂) or with a long yellow transverse band (♀) which gets broader towards the hind-margin and almost reaches it. Hindwing beneath with a darker nebulous transverse band (♂) or with some black discal dots (♀). Forewing beneath black, at the costal margin narrowly and at the apex very broadly light reddish-yellow. Madagascar. *paroechus.*

**T. (?) ismael** Oberth. is only known in the female and seems to differ very little from the ♀ of *paroechus ismael*. Mab. OBERTHÜR regards it even as the same species which MABILLE took to be the ♀ of *paroechus*, and pretends that the true ♀ of *paroechus* entirely corresponds with the ♂. The ♀ figured by OBERTHÜR, however, differs from *paroechus*-♀ Mab. by a shorter transverse band of the hindwing above, and a darker, brown under surface which does not exhibit any black dots on the hindwing. Madagascar.

**T. (?) gillias** Mab. (= kingdoni *Btlr.*) differs from all the preceding species in the hindwing above *gillias*. not being spotted yellow. Forewing with three subapical dots. Hindwing beneath dark-brown without spots,

*epimalchus*. fringes yellow. Discal spot 1 b of the forewing above short (transparent ? ?). Madagascar. — **epimalchus** Oberth.  
*perroti*. Discal spot 1 b of the forewing above short, oval, yellow. Madagascar. — **perroti** Oberth. Discal spot 1 b on the upper surface of the forewing triangular, towards the base extended into a long point. Madagascar.

*apostrophia*. **T. (?) apostrophia** Oberth. Forewing with three white subapical dots and long, narrow, yellow discal spots in 1 a and 1 b. Hindwing above with a yellow discal transverse band and golden yellow fringes. Forewing beneath with white marginal spots in 4 to 7. Very different from all the other species by the above described under surface of the hindwing. Madagascar: Fianarantsoa.

*chirala*. **T. (?) chirala** Trim. Both wings above dull dark brown with somewhat lighter brown fringes; forewing above with 6 small hyaline spots (two in the discal cell and one each in 2, 3, 6, 7, which are almost exactly arranged as in the species from Madagascar) and a yellowish spot in 1 b. Hindwing above without spots, but in the centre somewhat lighter yellowish. On the under surface the hindwing and the apex of the forewing are of a bright light yellow and decorated with ferruginous markings. Of this rare species, as much as I know, hitherto but one single ♀ is known, having been captured already in 1892 by F. C. SELOUS in the Mineni Valley in Maniceland.

#### 4. Subfamily: **Hesperinae**.

In the genera of this subfamily vein 5 of the forewing is quite straight and rises exactly in the centre between 4 and 6 or nearer to 6.

#### Review of the Genera.

A. Antennal club obtuse, not extended into a sharp point, straight, or near its base bent down towards the antennal shaft.

α. Antennal club almost straight. Smaller forms, 17 to 26 mm. — ♀ without anal wool.

1. Border and fringes of the hindwing entire or almost entire. Forewing on both sides with numerous, not transparent, white spots; generally two white dots in the discal cell. Fringes white with dark spots at the ends of the veins. 1. *Hesperia*.

2. Margin and fringes of the hindwing undulate. The white spots of the forewing are somewhat hyaline; no white dots in the discal cell of the forewing before its apex. 2. *Carcharodus*.

β. Antennal club before its centre more or less bent down towards the antennal shaft. Larger species, 28 to 35 mm. — ♀ with anal wool.

1. Vein 5 of the forewing rises in the centre between 4 and 6. The margin of the hindwing is rounded off or straight at vein 3. The posterior margin of the forewing is straight. 3. *Abantis*.

2. Vein 5 of the forewing rises distinctly nearer to 6 than to 4. The margin of the hindwing at the end of vein 3 distinctly angled. Forewing at the posterior margin more or less emarginated. 4. *Caprona*.

B. Antennal club extended into a sharp, often long and bent down point.

α. Costal margin of the forewing before the apex distinctly emarginated, whereby the apex is particularly pronounced. 5. *Procampa*.

β. Costal margin of the forewing in the apical part bent or straight.

\*. Forewing without a light dot or spot at the costal margin in area 12.

§. The median of the forewing is distinctly bent between the veins 2 and 3. 6. *Tagiades*.

§§. The median of the forewing is straight or almost straight between the veins 2 and 3.

o. Third palpal joint long, almost cylindrical and straightly porrect. The margin of the hindwing between the veins 4 and 6 emarginated in the shape of a bow. Forewing without a hyaline spot in area 11. — ♂. Forewing without a costal fold.

oo. Third palpal joint knob-shaped or short knob-shaped.

+. ♂. Hindwing above without a mealy spot at the costal margin and the forewing beneath without a hair-pencil at the posterior margin.

1. ♂. Forewing at the costal margin with a distinct costal fold. 8. *Eagris*.

2. ♂. Forewing without a costal fold. 9. *Sarangesa*.

++ ♂. Hindwing above with a mealy spot at the costal margin and the forewing beneath at the posterior margin with a hair-pencil. 10. *Tricosemeia*.

\*\* . Forewing on both sides with a light spot or dot at the costal margin in area 12. Terminal joint of the palpus short, knob-shaped.

1. The median of the forewing between the veins 2 and 3 quite straight. 11. *Celaenorrhinus*.

2. The median of the forewing between the veins 2 and 3 distinctly bent. 12. *Ortholexis*.



# 1. Genus: *Hesperia* F.

The Ethiopian species are entirely like the palearctic species above black or blackish-brown, decorated with numerous small white spots. The ♂♂ are without the costal fold of the forewing and the hair-pencil of the posterior tibiae. The species only occur on the continent and in Arabia, but are absent in Madagascar and all the other islands of the Ethiopian region. Most of the species, however, are confined to South Africa.

In order to avoid repetitions in the review of the species and in the description, I supply here a description of the typical marking of the genus. Forewing: on the upper surface there occur on a blackish or dark brown ground the following dots or spots: 2 or 3 basal spots (in 1 b often parted or strigiform, in the discal cell before the centre and in 12 [generally absent], a spot in or somewhat behind the centre of the cell, a minute dot behind this spot in 1 b (often absent), distinct discal spots in 1 b to 3 (rarely in 4 and 5), 6 to 8 (of which that in 1 b is generally parted and thus composed of 2 spots, of which I denote the interior one, being situate more towards the base and adjoining to vein 1, as discal spot 1 b<sup>1</sup> and the other as discal spot 1 b<sup>2</sup>), and submarginal dots in 1 b to 8. Besides there occur at the costal margin itself at the end of the areas 8 to 11 four short white longitudinal streaks. The genus is very peculiar since it exhibits, at the base of the areas 4 and 5 immediately on the external part of the cross-veins, a crescentiform transverse spot, the central luna, which therefore is not situate in the apex of the discal cell, as is often stated. Beneath the forewing is quite similarly marked, but the spots are often larger and the basal spot of the discal cell is sometimes strigiform.

The hindwing above is blackish or dark brown and normally exhibits the following white markings: a basal dot in the discal cell, a discal transverse band of spots in 1 b to 5, and a series of submarginal dots in 1 b to 5.

On the under surface the hindwing is generally variegated and differs more or less in the numerous species. On an average, the ground-colour is white or yellowish-white and generally occurs purely without any darkening or spots at the hind-margin in the areas 1 a and 1, whereas the other surface is crossed by two dark transverse bands extending from the costal margin to vein 1 b and being separated by a light median band which is either coherent or once or twice interrupted by dark transverse streaks. At the base there often occur dark spots which are more or less united with the interior dark transverse band, so that either the whole basal part is darkened or light spots of the ground-colour appear at the base. In a similar way also the exterior dark transverse band may be united with dark submarginal bands, so that the marginal part of the wing becomes dark almost as above and encloses small light submarginal spots. The direction of the light median band is also of importance, extending sometimes from the centre of the costal margin more or less bent towards the hind-margin, or starting sometimes before the centre of the costal margin in the direction of the anal angle or the distal margin of the wing.

I regret very much that the figures of the under surface (pl. 75 c, d) of several species are very inaccurate and partly quite irre recognizable. For further particulars I refer to the single species.

CH. OBERTHÜR, in 1912, supplied most excellent figures of nearly all the African species of *Hesperia* (Etudes de Lépidopterologie comparée 6, pl. 142, 143, fig. 1301 to 1332). Those desirous of a closer study of this difficult group I refer to these figures.

OBERTHÜR is known to have sedulously adhered to the opinion that a lepidopteral species can only be ascertained by a figure. I can, however, not espouse this opinion of his, for although a life-like figure is much better than a bad description, yet it can only represent a single specimen and not a species. The idea of a species is to comprise the characteristic marks common to all the specimens of the species and distinguishing it from other species, and it can therefore only be ascertained by a description. The mere comparison of two figures does not give us exact information as to which differences may be relied on.

## Review of the Species.

### I. Hindwing beneath with a marking quite different from the marking above.

A. Forewing above at least in the discal cell with a white basal spot, thus with two white dots in the discal cell. Both wings above with submarginal dots.

a. The light median band of the hindwing beneath is pointing towards the margin at the end of vein 2 and sometimes posteriorly cleft into two branches; it reaches the margin or it is separated from it by dark colouring. The dark bands are sometimes almost entirely broken up into dark streaks or spots. Also above the discal spots 3 to 6 form an erect band pointing towards the margin.

*H. ploetzi*.

β. The light median band of the hindwing beneath is pointing towards the anal angle or hind-margin and terminates into the light hind-margin or it is directed towards it.

\*. The light median band of the hindwing beneath is not interrupted, between the costal margin and vein 1 b coherent, at most bordered by a dark spot in 1 c, rarely almost as dark as the ground-colour and thereby not very distinct and only marked by its exterior border-line.

§. Forewing on both sides with discal spots in 4 and 5 or at least in 4 and often also with white streaks in 10 and 11.

*H. agylla.*  
*H. asterodia.*  
*H. machacoana.*  
*H. abscondita.*

§§. Forewing as usual without discal spots in the areas 4 and 5.

+. Forewing above without a basal spot in area 1 b.

∧. The exterior spot of the discal cell of the forewing is far remote from the central luna.

o. Hindwing beneath without distinct basal spots; the median transverse band is often darkened brownish, but always distally bordered by a finely dentate dark brown or blackish line.

*H. secessa.*

oo. Hindwing beneath with distinct whitish basal spots on a darker ground; the median band is light and not distally bordered by a dark line.

*H. transvaaliae.*

∧∧. The exterior spot in the discal cell of the forewing is situate close at the apex of the cell and may even be united with the central luna.

*H. kituina.*

++. Forewing above with a white basal spot in area 1 b.

∧. Hindwing beneath in the basal area with some distinct dark spots and between them with 3 to 5 whitish spots of which that in 1 c is short, not strigiform.

*H. dromus.*

∧∧. Hindwing beneath in the basal area without distinct spots or only at the costal margin in area 8 with a dark spot. The basal area with the same ground-colour as the light median band.

o. The discal spot 1 b<sup>2</sup> of the forewing above is absent or minute, punctiform, the discal spot 1 b<sup>1</sup>, however, large, separated from the discal spot 2 and situate more towards the base.

*H. zaira.*

*H. leucomelas.*

oo. The discal spot 1 b<sup>2</sup> of the forewing above is relatively large, situate exactly behind the discal spot 2 and sometimes parted by the fold. Discal spot 1 b<sup>1</sup>, however, small and indistinct. Forewing above with two spots or streaks near the base of area 1 b, almost right behind the basal spot in the discal cell. Submarginal dots of the forewing above small and equally large. Hindwing beneath in the basal area whitish, without spots.

*H. diomus.*

*H. ferax.*

*H. lacreuzi.*

\*\*. The light median band of the hindwing beneath is once or twice interrupted, in the former case forming a spot and a band, in the latter case forming three separate spots. Forewing above in area 1 b with a white basal spot and two almost equally large discal spots, the exterior one of which (= 1 b<sup>2</sup>) is situate right behind the discal spot 2 with which it forms a double spot.

§. Hindwing beneath not monotonously dark with sharply separated whitish spots; the light median band only interrupted in area 6 by the brown colour of the exterior transverse band.

*H. spio.*

*H. maja.*

§§. The dark ground-colour of the hindwing beneath, between the costal margin and the vein 1 b, encloses 2 or 3 light basal spots and 3 discal spots; these are to be regarded as the remainders of the interrupted median band.

*H. adenensis.*

B. Forewing above without any white basal spots at all or at least with but one white dot or spot in the discal cell.



α. Both wings at least above with white submarginal dots.

\*. Forewing as usually with white discal spots in 1 b to 3, 6 to 8.

§. Hindwing beneath blackish, at the hind-margin only in the marginal halves of the areas 1 a and 1 b whitish, in the centre with two (or three) narrow white, black-edged transverse lines, the first of which (before the centre) reaches neither the costal margin nor the vein 1 b, whilst the outmost one begins behind the costal margin, reaches to the light area 1 b and is very much bent; the costal margin is consequently dark in its whole length.

*H. sandaster.*

§§. Hindwing beneath much lighter, with more variegated colours and a broad whitish median transverse band.

+. Hindwing beneath without a white submarginal band, at most with some separate whitish antimarginal spots in 4 to 6; the light median band is almost equally broad.

*H. sataspes.*

*H. nana.*

++. Hindwing beneath (close) before the margin with a coherent, white or whitish submarginal band.

1. Discal spot 2 of the forewing above single.

a. The light median band of the hindwing beneath is very broad, posteriorly somewhat tapering. Discal spot 1 b<sup>1</sup> of the forewing above parted into two streaks by the fold, 1 b<sup>2</sup> very small, punctiform. A larger species, about 26 mm.

*H. rehforesi.*

b. The light median band of the hindwing beneath is narrow, straight and equally broad. Discal spot 1 b<sup>1</sup> of the forewing above single. A smaller species, about 21 mm.

*H. delagoae.*

2. Discal spot 2 of the forewing above parted into two spots; discal spot 1 b<sup>1</sup> parted into two streaks by the fold. The discal band of the hindwing above is long and narrow, coherent.

*H. zebra.\**

\*\*. Forewing without discal spots in 2 to 8.

*H. melaleuca.*

β. Both wings without any white submarginal dots.

*H. mangana.*

II. Both wings beneath almost as above with separate white dots or spots on a brown or red-brown ground.

*H. colotes.*

**H. ploetzi** *Auriv.* (= spio *Plötz*) (75 c). The figure is a copy of *Plötz*' original figure, but it is evidently *ploetzi*. quite crude or it represents a rare aberration. The under surface of the hindwing is of a most variable marking, but it is always distinguished by the yellowish-white median band being single and continuous only from the costal margin to vein 3, but then either entirely filled up by two dark longitudinal spots of the areas 2 and 1 c or divided into two fine branches, the interior one of which reaches the vein 1 b near its centre, whilst the other reaches the apex of vein 2. The veins are more or less whitish, whereby the dark transverse bands are often broken up into elongate spots; basal area light, spotless. Forewing with basal spots in 1 b and the cell, discal spots in 1 b to 3, 6 to 8 (spots 1 b<sup>1</sup> large, 1 b<sup>2</sup> small, right behind that in 2), with a fine central luna and distinct submarginal dots. The upper surface of the hindwing deviates from that of all the other species by the discal spots 3 to 6 forming an almost equally broad, erect transverse band pointing towards the margin. Sierra Leone to Congo. — **rebeli** *Higgins* (= *zebra Rbl.*) is merely one of the numerous variations of this *rebeli*. species and distinguished by the lighter veins of the hindwing beneath and by a light slanting stripe proceeding from the median band in area 7 and reaching the margin at the apex of vein 5. On Lake Tanganyika, a similar specimen (♀) also from Cameroon.

**H. asterodia** *Trim.* (75 c; quite misleading by the glaring colours and inaccurate marking). Forewing *asterodia*. above with oblong white spots at the costal margin in 9 to 11; discal spot 1 b<sup>2</sup> behind that in 2, 5 often absent. Basal spot 1 b indistinct or absent. Hindwing above without or with an indistinct basal dot; discal band long, composed of frequently somewhat separate spots of the areas 1 c to 6 (to 7). Hindwing beneath with a whitish or yellowish ground-colour, in the basal area almost spotless; the light median band is more coherent, towards the hind-margin often somewhat narrowed though not interrupted; the dark transverse bands are brown, often with black transverse streaks, and the distal one is not rarely narrowly interrupted at vein 5; the light marginal part is more or less spotted. Cape Colony and Transvaal.

**H. agylla** *Trim.* is unknown to me, but according to *Trimen* very closely allied to *asterodia*. It is *agylla*. smaller with purely white markings and larger discal spots above. On the under surface the ground-colour of the hindwing and the apex of the forewing are darker, and the fringes at the ends of the veins are distinctly spotted black. The hindwing beneath is dark at the base, but with a short white subbasal band, which is connected with the white median band by 1 or 2 very fine white lines. Cape Colony.

*machacoana*. **H. machacoana** *Btlr.* is likewise very similar to *H. asterodia*, but larger (31 mm) with a lighter ground-colour of the hindwing beneath and more irregular dark transverse bands. Discal spots 1 b<sup>2</sup> of the forewing larger, right behind the discal spot 2; basal spot 1 b large, double. Neither the description nor the figure shows whether the areas 9 to 11 of the forewing above have white spots or not. British East Africa.

*abscondita*. **H. abscondita** *Plötz* (75 d) is known to me only from the description and the undoubtedly somewhat crudely executed figure by *Plötz*, which is copied here. The species seems to be distinguished by the dark longitudinal stripe at vein 1 b in the basal part of the hindwing beneath, and it probably belongs to the *asterodia*-group. The author describes it, as follows: forewing in the cell 1 (= 1 b) towards the base with a white dot and half a typical spot (= discal spot 1 b<sup>2</sup>) below that of the cell 2. Hindwing with a white basal dot and a somewhat slanting white transverse spot on the centre. Hindwing beneath white with 2 oblique, undulate, dark bands widening from the costal margin into the cell 1 c. Towards the base there is another narrow spot coherent with the first band in the cell 1 c. The space between the second band and the margin, from the costal margin to vein 2, is greenish-grey, bordered with white." Length of forewing 13 mm. „Africa“.

*secessa*. **H. secessa** *Trim.* The dry season form having been described first deviates from the other species by the median band of the hindwing beneath being very much darkened, of a light ferruginous brown and thereby neither distinctly contrasting with the similarly coloured basal part nor with the interior dark transverse band; the latter is only represented by some indistinct nebulous spots; outwards, however, the median band is sharply defined by a blackish-brown line; this line forms the interior margin of the exterior dark transverse band, which is otherwise but slightly darker than the ground-colour. Still more peculiar are the very broad fringes of the forewings; they are above in their interior half jet-black with minute whitish-grey spots at the ends of the veins, but in the exterior half uni-coloured light reddish-grey, beneath uni-coloured reddish-grey without spots. Damara Land, Ovambo Land, Rhodesia, Mashona Land. — **trimeni** *form. nov.* (75 d, as „secessa“) is probably the rainy season form and deviates from the dry season form by the ground-colour being yellowish white, as the figure shows, with distinctly prominent dark transverse bands. The fringes of the wings as usually speckled black and white. Rhodesia.

*transvaaliae*. **H. transvaaliae** *Trim.* is a small species approximating the following species, but wanting the basal spot 1 b of the forewing. Forewing above: the basal spot of the discal cell is small, oblong; the central luna large, almost square; discal spot 1 b<sup>1</sup> also large and square, 1 b<sup>2</sup> absent, 2 at least sometimes parted. Hindwing above with a basal dot and a complete straight median band in 1 b to 7. Both wings above with a complete or almost complete row of submarginal spots. Forewing beneath spotted almost as above, at the anal margin somewhat lighter. Hindwing in the basal area dark with distinct white spots, one square spot each in the areas 7 and 8 and in the discal cell, and a longitudinal streak in 1 c; the median band from the costal margin to vein 1 b coherent and almost equally broad, but with uneven edges; marginal part blackish-grey with some white submarginal spots. Transvaal and Zulu Land.

*kituina*. **H. kituina** *Karsch* (= *bettoni* *Btlr.*). The description shows that this species, having hitherto hardly been heard of is the same as *H. bettoni*. I copy here *Karsch*'s original description. „Wings above blackish-green, beneath lighter. Forewing above with small white spots: in the cell a small punctiform spot before the centre and a larger spot beyond the centre very near to a fine white cell-end line; behind the larger spot of the cell two larger spots, one each in 2 and 1 b, the anterior of which is somewhat more outwardly placed; moreover, between the cell and the apex of the wing, in 6 to 8, three heaped small spots and behind them an isolated small spot in 3; finally there are two distinct minute spots near the distal margin in 4 and 5, which belong to a series of almost quite extinct small spots parallel to the margin. Hindwing above with a white punctiform spot in the cell near the base, right beyond the cell-end a band of larger white spots, which is anteriorly broadly truncate and extends into the space between the veins 8 and 7, being outside and inside feebly crenulate and posteriorly narrowly terminating towards the anal angle; between this band and the distal margin parallel to the latter a row of small white spots, of which those in 2, 4 and 5 are more distinct. On the forewing beneath all the spots are larger than above, and the posterior margin is whitish on the distal half. Hindwing beneath right beyond the cell-end crossed by a white oblique band towards the hind-margin near the anal angle, being expanded at the costal margin where it encloses a round dark green spot, and being outside and inside feebly crenulate; the base is also of a whitish colour. Fringes speckled black and white. Expanse of wings: 19 mm.“ British East Africa: Kitui. By the position of the second white spot in the cell of the forewing as well as by the dark spot at the costal margin (in 7) in the white median band of the hindwing beneath this species differs from all the other African species.

*dromus*. **H. dromus** *Plötz* (75 c). Forewing above: central luna narrow; discal spot 1 b<sup>1</sup> large, 1 b<sup>2</sup> very small or absent; no white spots in 9 to 11. Hindwing above with a basal dot and a broad, black bent median band in 1 e to 6. The marking beneath is seen from the figure; the ground-colour of the hindwing, however, is often more yellowish. Natal to Kilimandjaro and Gabun.



**H. zaira** Plötz (75 d) is only known to me by PLÖTZ' description and his rather bad figure which is *zaira*. copied here. The figure does not correspond with the description. The species is surely very closely allied to *dromus*, as PLÖTZ has himself stated by the review. His description contains beside what is common to both species, merely the following: Hindwing beneath of a dingy greenish white with two broad olive green transverse bands extending from the costal margin into cell 1 e, one of which is faded brownish towards the base, the other towards the margin. Forewing in cell 1 b with a large white central spot, a dot below the spot of the cell 2, and a small spot towards the base. The upper surface as in *vindex*.“ Congo.

**H. leucomelas** Oberth. Wings above black with distinctly prominent white spots. Forewing above *leucomelas*. with a basal streak in 1 b and a basal spot in the discal cell, central luna moderately large or strigiform; submarginal spots 4 and 5 large; fringes above in the basal half black with minute white streaks at the end of the folds. Hindwing above with a basal dot and a white median band almost as in *dromus* and *spio*. Under surface as in *dromus*, but the basal area of the hindwing with but one dark spot (in 8). Expanse of wings: 24 mm. East Africa: Mpala; Nyangao.

**H. diomus** Hpffr. (75 c; bad and schematic, the colours too glaring). This and the two following *diomus*. species form a small group distinguished by the forewing above exhibiting near the posterior margin two small white transverse streaks being vertically placed towards the posterior margin and therefore being parallel, one of which is composed of the basal spots in 1 b and in the discal cell, the other of the discal spots 1 b<sup>2</sup> and 2; as the spots in 1 b may often be parted by the fold, each of the two transverse streaks is often composed of three divisions. The light median band of the hindwing beneath commences about at the centre of the costal margin, it is feebly bent and therefore not so erect as in the following species. Portuguese and „German“ East Africa.

**H. ferax** Wallengr. (= *ferox* Oberth.) (75 c) only differs from *diomus* by the light median band of *ferax*. the hindwing beneath commencing before the centre of the costal margin, being almost straight and therefore more erect. It is presumably only a southern race of *diomus*. Cape Colony to Damara Land and Transvaal.

**H. lacreuzi** Oberth. I only know from the figure. It is somewhat larger than the two preceding *lacreuzi*. species with exactly the same macular marking of the forewing. Hindwing above with a white basal dot and a white median band, which is composed of an isolated rounded dot in 1 e, an oblong spot in 2, a minute triangle in 3, a large quadrangular spot in 4 + 5, and a minute dot in 6. Hindwing beneath on a monotonous white ground only with the usual dark transverse bands and without dark spots or band at the margin; the dark transverse bands are narrow, almost broken up into spots and terminating at vein 1 b, not quite reaching the costal margin. Transvaal.

**H. spio** L. (= *vindex* Cr.) (75 c). This long-known species is easily discernible from all the others *spio*. by the figure and the marks mentioned in the review. Cape Colony to Delagoa Bay, Kilimandjaro (and Angola?).

**H. mafa** Trim. (75 c) has smaller, more equally sized submarginal dots of the forewing and a narrower *mafa*. median band more broken up into spots on the hindwing above, but otherwise it exactly corresponds with *spio*; the light median band of the hindwing beneath is sometimes, though not always, defined towards the light hind-margin by a dark spot at vein 1 b. Cape Colony to Transvaal.

**H. adenensis** Btlr. is above similar to the two preceding species, but on the hindwing beneath different *adenensis*. from all the other species dealt with here by being of a monotonous dark grey except the whitish spotless hind-margin (in 1 a and 1 b). with sharply defined whitish spots, 3 in the basal area, 3 right across the centre, and some smaller marginal ones. Arabia: Aden. — According to REBEL, it is merely a race of the Indian *H. galba* F. (Vol. IX, pl. 165 i).

**H. oberthüri** sp. nov. (= *transvaaliae* Oberth.) I denominate a small species which was figured by *oberthüri*. OBERTHÜR as *transvaaliae* and is otherwise unknown to me, but which can evidently not be the same species as TRIMEN'S *transvaaliae*. According to the figure, *oberthüri* exactly corresponds above with *H. mafa*, except that the basal spot in area 1 b of the forewing seems to be absent. The under surface of the forewing is also hardly different, but there seem to be small discal spots in 4 and 5. The hindwing, however, is beneath quite different, being everywhere also as far as the hind-margin of an almost monotonous light greyish brown, without distinct dark transverse bands and without any other markings but two rounded whitish discal spots, one in 4 + 5 and the other in 6 + 7. Kimberley.

**H. sandaster** Trim. (75 c) differs considerably from the other species by the under surface of the hindwing *sandaster*. and is therefore easily recognizable by the description in the review and the unfortunately very mediocre figure. Cape Colony. — According to HIGGINS, the hind tibiae show but two spurs, and it may belong to another genus.



- sataspes*. **H. sataspes** *Trim.* (75 c; colours too glaring and light). Both wings above without basal dots; forewing only with a dot in the cell and a distinct central luna; discal spot 1 b<sup>1</sup> small, strigiform or absent, 1 b<sup>2</sup> absent, 3, 4, 6 to 8 distinct, sometimes also a minute dot in 5; submarginal dots equally large; hindwing above with a narrow discal band which consists of but three spots (in 2, 4 and 5), submarginal spots small. Fringes of both wings at the base blackish with small whitish spots between the ends of the veins. Forewing beneath with a blackish-grey ground-colour (scarcely darker in the centre) and the same white marking as above, but often with discal dots in 4 and 5. Hindwing beneath at the base yellowish or blackish-grey and often warming into the interior slightly darker transverse band from which, however, it is separated by a subbasal whitish transverse streak in 7 and 8; the exterior dark transverse band gradually passes over into the brown or slightly lighter marginal part or it is separated from it by a series of small whitish submarginal spots. Cape Colony and Natal.
- nana*. **H. nana** *Trim.* (75 c; a bad figure) is very near to *sataspes*, but still somewhat smaller, it has a somewhat bent discal band of the hindwing above and a much lighter brown under surface of the hindwing with an irregular, serpentine, twice (in 2 and 5) very much narrowed, white median band. Cape Colony.
- rehfousi*. **H. rehfousi** *Oberth.* is described in the review of the species according to the author's figure. The hindwing beneath shows everywhere a whitish-grey ground-colour (just as light as at the hind-margin in 1 a and 1 b) with four darker grey transverse bands on it, a very short and small one at the base, neither reaching the costal margin nor vein 1 b, one at the margin between the costal angle and vein 2, and the two other broadly separated ones as usually between the costal margin and vein 1 b. Mpala on Lake Tanganyika.
- delagoae*. **H. delagoae** *Trim.* almost entirely corresponds above with *H. sataspes* and only differs beneath in the whole basal part of the hindwing being uni-coloured dark grey, spotless, and by the light median band being more sharply defined and more entirely margined. In addition, as the most important difference, the light submarginal spots are united into a dentate submarginal line.
- zebra*. **H. zebra** *Btlr.* (75 d) is sufficiently characterized by the description above and the figure. Natal. \*)
- melaleuca*. **H. melaleuca** *Oberth.*, if the figure is correct (in the text nothing is said about it), differs from all the species of the genus known to me in the forewing exhibiting but one discal spot (in 1 b). The forewing thus shows on both sides only a dot in the discal cell before its centre, a central luna, a basal streak and a discal spot in 1 b, as well as unequally large submarginal spots in all the marginal areas. Hindwing above with a basal dot, a broad coherent median band, and submarginal spots; beneath at the base whitish, with a broad light median band, large submarginal spots separated by the darker veins, and very narrow, irregular dark transverse bands extending as usually from the costal margin to vein 1 b. „German East Africa“: Kitanga.
- mangana*. **H. mangana** *Rbl.* is at once recognizable by both wings above and beneath lacking the submarginal spots. Forewing on both sides almost quite similar, dark brownish-grey with 7 to 9 whitish spots (one dot in the discal cell, a distinct central luna, discal spots in 1 b to 3 (5), 6 to 8, and an indistinct basal spot in 1 b). Hindwing above with three minute discal spots and beneath as far as the base dark brownish-grey with an entirely straight, narrow, whitish median band; majority of hind-margin darkened. Arabia.
- colotes*. **H. colotes** *Drc.* (75 d; enlarged; in reality the species is scarcely larger than *nora*) deviates from the other species by the uniformly brown under surface of both wings being marked as above. Angola. — **nora** *Plötz* (75 d) only differs from *colotes* in its darker upper surface and ferruginous brown under surface. Figure copied from PLÖTZ' original design. French Congo: Loango.

Note: Only after I had finished dealing with this genus, I was able to get hold of L. G. HIGGINS' Essay on the Ethiopian species of the genus *Hesperia* (Trans. Ent. Soc. Lond. 1924, pp. 64 to 120, plates 7 to 10). As this work could no more be used, I beg to refer to it here. HIGGINS distributes the 18 species acknowledged by him among 9 groups distinguished according to the marking: 2 species, *H. paula* and *bifida* and 5 varieties (3 of *H. transvaalica* *Trim.* and 2 of *H. dromus* *Plötz*) are described as novelties.

*H. leucomelas* *Oberth.* is regarded as synonym of *dromus* *Plötz*; *H. laereuzei* as that of *jerax* *Wattengr.*; *H. machacoana* *Btlr.* and *abseondita* *Plötz* as synonyms of *dromus*; *H. rehfousi* *Oberth.* as synonym of *depauperata* *Strd.*

## 2. Genus: **Carcharodus** *Hbn.*

This genus, which has already been described in Vol. I, p. 335, is near to the preceding and only differs by the marks stated in the review of the genera. But one Ethiopian species.

- elma*. **C. elma** *Trim.* (75 d; colours too glaring). Wings above greyish-brown. Forewing at the costal margin and base darker, shortly before the centre with a fine, black, feebly bent transverse streak between vein 1 and 11, in the areas 4 and 5 with a dark, slanting spot, and at the margin in 2 and 3 broadly darkened; besides with the following hyaline spots: a transverse streak before the apex of the discal cell; discal spots

\*) On p. 336 of Vol. I the name *zebra* (misprinted as *zelva* *Btlr.*) is placed by P. MABILLE as synonym to *galba* *F.* On plate 85 b of Vol. I the large-spotted form the palearctic part of Cashmere is figured, on pl. 156 i of Vol. IX the small-spotted form of *galba* from Tropical India (alpine form from the Nilgiris).



in 2 and 3 and subapical dots in 6 to 8. Hindwing above with a white basal dot and a straight white median band in 1 e to 6. The under surface is more monotonously dark grey with almost the same white markings but with two basal spots of the hindwing. The forewing above shows in the marginal part a very faint greenish hue by far not so as in the figure. Cape Colony to Angola, Nyassa and Usambara.

### 3. Genus: **Abantis** *Hpffr.*

This genus differs from the others in a conspicuous way in the marks mentioned in the review of the genera. It contains several pretty but mostly very rare species which are widely distributed on the African Continent, whereas in Madagascar and the other islands they are absent.

#### Review of the Species.

A. Hindwing on both sides with 5 to 7 sharply defined black punctiform spots, 2 in area 7, 2 in the discal cell, and 1 to 3 in 1 e. Hind body black with white posterior edges of the segments. *A. tettensis.*

B. Hindwing without black punctiform spots.

$\alpha$ . Hindwing on both sides black or steel-blue with three large white spots (in 1 c, 7 and the discal cell as well as the base of 4 and 5) and 2 or 3 small ones (in 2 [3] and 6); all are separated by the dark veins. Forewing with 2 or 3 white or yellowish spots in 1 b, one basal spot each in 2 and in the discal cell, and 7 hyaline spots (a large one in the apex of the cell and one each in 2, 3, 5 to 7 or 8). Frons before the antennae white. Collar on each side with a red spot. Abdomen with variegated colours and an orange or red anal pencil.

\*. Wings with a black ground-colour. Abdomen above with 4 broad, red transverse bands, sometimes interrupted on the dorsum. Shoulder-covers with a whitish spot at the base and an oblong orange-red central spot. Mesodorsum on each side with an orange spot. Metadorsum on each side with a large black, at the anterior edge white hair-pencil. Forewing generally without a hyaline spot in area 8. Hindwing on both sides in area 1 a white, in 1 b black. Palpi beneath ochreous-yellow.

*A. paradisea.*

\*\*. Ground-colour of the wings steel-blue with a slight green lustre. Abdomen on each side in the centre with a large white or reddish-yellow spot formed by the confluent transverse bands and above separated by a dark dorsal line. Shoulder-covers with a white spot at the base (often covered) and a white spot in the centre. Mesodorsum on each side with a white spot. Metadorsum on each side with a large red hair-pencil. Palpi beneath black with two large white spots, one on the first joint and one on the second. Forewing with a hyaline spot in area 8. The areas 1 a and 1 b of the hindwing on both sides blue-black or almost black.

*A. zambesiaca.*

$\beta$ . Wings never coloured and marked as in  $\alpha$ .

\*. Forewing above dark coloured with or without light markings.

§. Hindwing without a dark transverse spot at the end of the discal cell. Forewing almost invariably with white hyaline spots.

o. Forewing above at least in the marginal part jet-black with large, longish or linear spots in the areas 1 b to 8 or at least in 1 b to 3, 6 to 8 and in the discal cell.

+. Both wings beneath of a bright yellow with a fine black marginal line, some dark spots in the centre of the forewing and the veins at least partly black. Forewing above as far as the base black with yellow spots: three basal spots (2 in 1 b, one in the cell), 8 discal spots (in 1 b to 8), and a transverse spot in the apex of the discal cell. Hindwing above yellow, at the distal margin and at the hind-margin black.

*A. bicolor.*

++. Ground-colour beneath not yellow. Forewing with white markings. Hindwing on both sides white with dark margins. Forewing above black, in the basal third more or less covered with yellow or reddish-yellow.

-. Forewing instead of the spots with fine white longitudinal lines, two each in 1 b and the discal cell, and one each in 2 to 8. *A. leucogaster.*

--. Forewing with white discal spots in 1 b to 3 (4), 5 to 8 and a large quadrangular spot in the discal cell. *A. bismarcki.*

oo. Forewing above brown, yellowish-brown, or yellowish, with distinctly prominent black veins and white hyaline spots at least in 6 to 8 (subapical spots). Area 1 b always spotless.

+. Forewing with hyaline spots in 2, 3 and in the discal cell (one or 2 oblong ones).

-. Forewing above from the base to the apex light brownish-yellow, then smoke-brown, beneath quite ochreous-yellow. Hindwing on both sides white with dark margins. *A. lofu*.

--. Forewing above not or only in the basal third yellowish.

1. Hindwing at the base with three oblong hyaline spots, 2 in the discal cell and one in area 7.

2. Hindwing without hyaline spots.

a. Hindwing above in the centre very extensively white or at least with a light median band.

a'. Hindwing above blackish-brown with a yellowish-white median band of but 4 mm width from vein 8 to the fold of area 1 c.

*A. elegantula*.

b'. Hindwing above with a broad white median band from the costal margin to vein 1 b or 1 a, or still more extensively white or whitish.

*A. nigeriana*.

*A. lucretia*.

b. Hindwing above brownish-yellow with all the veins and a narrow marginal band black.

*A. venosa*.

++. Forewing without hyaline spots in 2, 3, and the discal cell.

1. Forewing with hyaline dots in 6 to 8. Hindwing almost white, above at the base broadly blackish, and at the costal angle and at the hind-margin more or less darkened.

*A. efulensis*.

2. Forewing without any hyaline spots. Hindwing on both sides with a brownish-yellow ground-colour.

*A. venosa* var. *vidua*.

§§. Forewing above without any hyaline spots or other light spots, light reddish-grey with black veins. Hindwing pale reddish with black veins and a dark spot at the end of the discal cell.

*A. rubra*.

\*\*. Both wings above and beneath from the base to far beyond the centre of a pure white. Forewing with a black, equally broad marginal line, a similar, somewhat undulate submarginal line which is connected with the marginal line by the black veins, whereby a series of white marginal dots are separated, and a black, slanting subapical band from the costal margin to vein 4, where it is generally united with the black submarginal line. By this subapical band a second row of 5 or 6 white spots is separated. Hindwing on both sides with a black, towards the anal angle slightly widened marginal line. Fringes of both wings speckled black and white. — *Leucochitonea* Wallengr. *A. levebu*.

*tettensis*.

**A. tettensis** *Hpffr.* (75 a). Palpi below light yellow. Shoulder-covers black with white margins. Forewing above blackish-grey with a whitish basal streak at the costal margin and in 1 b (which is parted into two spots towards the margin), two white spots in the discal cell, white discal spots in 1 b to 8, and white marginal spots; the latter and the discal spots are partly confluent. Hindwing above whitish, beneath more yellowish, with a black, often white-spotted marginal band. Fringes of the wings speckled black and white. Cape Colony to Angola and Zambesi.

*paradisea*.

**A. paradisea** *Btlr.* (= *namaquana* *Ww.*) (76 i) is sufficiently characterized by the figures and the description in the review. Prothorax and palpi below ochreous-yellow. Natal, Ovambo Land, Rhodesia, and Madibira.

*zambesiaca*.

**A. zambesiaca** *Ww.* (= *zambesina* *Plötz*, *trimeni* *Btlr.*) (75 a) is above described at large. The large white lateral spot of the abdomen, if the white scales are rubbed off or damaged, turns yellowish or reddish, as a specimen at hand shows. Zambesi, Mashona Land, Rhodesia.

*bicolor*.

**A. bicolor** *Trim.* (76 i) deviates considerably from all the other species by the colour and marking. This rare species is only known from Caffraria, Natal, and the Zulu Land.

*leucogaster*.

**A. leucogaster** *Mab.* (75 a) differs from all the other species in the white longitudinal lines of the forewing. Head and thorax black with white guttiform spots; shoulder-covers at the apex yellow-haired. Mesodorsum and metadorsum on each side with a yellow hair-pencil. Abdomen white with a black dorsal band and a black lateral line on each side of the venter; anal pencil blackish. Sierra Leone and South Cameroon.

*bismarcki*.

**A. bismarcki** *Karsch* (75 a). The figured specimen represents a ♀. According to KARSCH, however, the ♂ differs but little from the ♀, chiefly only in the discal spot 1 b being smaller and by the absence of the white dot in 2. The discal spot 3 is small and irregular. Marginal band of the hindwing broad and dotted white. Togoland. — **arctomarginata** *Lathy* only deviates by the discal spot 3 of the forewing being equally broad and oblong,

*arctomarginata*.



broad and oblong, about as long as the spot in 1 b, and the marginal band of the hindwing is narrower (scarcely 2 mm broad) and almost spotless. Nyassa-Land. — **neavei** *form. nov.* NEAVE described and figured this *neavei*. form as the ♀ of *A. lofu*. But if KARSCH is right in saying that the sexes of *A. bismarcki* are entirely similar, it is unlikely that this form and *A. lofu* exhibiting quite differently spotted forewings are the sexes of the same species. *neavei* is very similar to *arctomarginata*, likewise showing an oblong discal spot in area 3 of the forewing, but being distinguished by the distinct white spots of the somewhat broader black marginal band of the hindwing. Judging from NEAVE's figure, it represents a ♂ and not a ♀. Rhodesia.

**A. lofu** *Neave* (75 a) is the first species of a series of forms in which the forewing shows 3 or 4 hyaline *lofu*. spots in the centre and three subapical hyaline dots; the central spots are usually contiguous. Hindwing beneath at the costal margin in area 8 and partly at the distal margin ochreous. Rhodesia.

**A. ja** *H.-Dree.* (75 b). Wings above with a brown ground-colour and a lighter yellowish-brown sub- *ja*. marginal band of the hindwing, beneath the ground-colour is almost monotonously yellowish-brown, the hind-margin of the hindwing being paler and all the veins black. South Cameroon.

**A. elegantula** *Mab.* Wings above blackish-brown; forewing with a separate hyaline spot in area 3, *elegantula*. beneath at the hind-margin in 1 a and 1 b lighter whitish. Hindwing beneath from vein 8 to the hind-margin with a white median band of about 6 mm width traversed by the black veins, and with black margins; the marginal band 4 mm broad without light spots. Sierra Leone. Cameroon.

**A. nigeriana** *Btlr.* This species being unknown to me is compared by BUTLER with *zambesiaca*, *para-nigeriana*. *disea*, and *plerotica*, but it is presumably most closely allied to *lucretia* and *venosa*. From the description we state the following: hyaline spots as in *A. plerotica*, besides a white streak in area 10, a white basal spot in the discal cell and two white dots at the base of the wing. Hindwing whitish, whereas the base, veins and distal margin with the fringes are blackish-brown; shoulder-covers very long, with a white dot at the base, one in the centre, and an orange apex; thorax laterally and apically with ferruginous pencils; abdomen at the base and apex smoky-grey, in the centre silvery white with a blackish dorsal line; anal pencil orange, at the base black. Antennae black; club below white. Wings beneath as above, but the forewing at the posterior margin whitish with brown veins; hindwing snow-white, the costal and distal margins of a deeper black. Chest and palpi ochreous; venter white with a dark, posteriorly yellowish lateral line. Nigeria.

**A. lucretia** *H.-Dre.* Forewing blackish-brown, at the base more or less scaled brownish-yellow or ferru- *lucretia*. ginous, with hyaline spots in the discal cell (often only 1), in 2, 3, and 6 to 8. Hindwing at the base in 7 and 8 ferruginous, on both sides between the veins 1 and 8 with a broad white median band and at the distal margin with a dark marginal band of 4 mm with, with black veins and whitish marginal dots in 1 b to 3 or 4. Palpi below yellow. Abdomen white, at the base black, above with a dark dorsal line, beneath with black lateral lines, at the apex with a yellow pencil. Cameroon and Congo.

**A. venosa** *Trim.* (75 a) is distinguished by the monotonously yellowish-brown upper surface of the *venosa*. hindwing. Forewing above brown with hyaline spots in the discal cell, in 2, 6 to 8, and often also with a small, isolated spot in 3; at the base of the wing two white dots. Fringes of the wings short and dark, at the anal angle of the hindwing longer and yellow. Forewing beneath as above, but at the hind-margin in 1 a and 1 b whitish. Hindwing beneath snow-white, at the base, at the costal margin in 8 and at the distal margin black without light spots; costal margin at the base whitish; distal-marginal band posteriorly broader; veins only at the hind-margin and near the distal-marginal band black. Palpi below and prothorax yellow. Transvaal to Rhodesia. — **umvulensis** *E.-Sh.* is the extreme dry season form distinguished by the hindwing beneath *umvulensis*. being of a monotonous brownish-yellow without a white central area and without black margins. Mashona Land. — **plerotica** *Karsch* is said to be the extreme rainy season form, and according to the description it seems *plerotica*. to differ but little from the type, perhaps only in the somewhat greater extent of the white colour on the hindwing beneath. East Africa. — **vidua** *Weym.* only differs from *umvulensis* in the absence of all the hyaline *vidua*. spots of the forewing. Angola. Mashona Land.

**A. efulensis** *Holl.* (75 b), as the figure shows, deviates from all the other species by the marking above *efulensis*. and by the hindwing beneath being white as far as the margin. Cameroon and North Congo.

**A. rubra** *Holl.* is described in the review and at once recognizable by the reddish wings being similar *rubra*. above and beneath. Congo District: Medje.

**A. levebu** apparently occurs in several intermediate local races and seasonal forms. — In **levebu** *Wal-* *levebu*. *lengr.* (= *lactea* *Plötz*), the three types of which (2 ♂, 1 ♀) are before me, the costal margin of the forewing is on both sides black, the marginal and submarginal bands as well as the black subapical bow of the forewing narrow and only connected by the black veins and consequently the white marginal spots are large and all the 6 white subapical spots distinct and oblong. Hindwing beneath with a black longitudinal ray along vein 8 to the centre of the costal margin; veins 1 a to 4 and the fold in 1 c more or less edged with black. Collar on each side and shoulder-covers in the basal part scaled orange. Palpi beneath white. Cape Colony

*defecta*. to Damaraland and Rhodesia. — **defecta** *form. nov.* (75 b, as *levebu*) is an extreme dry season form only distinguished by still narrower black markings of the forewing and by the absence of the black longitudinal ray on the hindwing beneath. — **amneris** *Rbl. & Rog.* (75 b, as *lactea*) is evidently a rainy season form distinguished by the greater extent of the black spots at the distal margin and at the apex of the forewing, whereby the white spots are reduced in size. It lacks, however, the black colouring at the costal margin of the forewing and the black longitudinal ray in area 6 on the hindwing beneath. East Africa: Massai Land and Madibira.

*hindei*. — **hindei** *H. Drc.*, according to the description, is an extreme form of *amneris*, in which the marginal band of the forewing is still broader and reaches the posterior margin, whilst the hindwing beneath exhibits a distinct black longitudinal ray in area 8. British East Africa: Kitui.

#### 4. Genus: **Caprona** Wallengr.

Like *Abantis* this genus also only occurs on the African continent, but not in Madagascar. For one (*canopus*) of the three species, MABILLE recently established a separate genus, *Netrobalane*. The differences, however, are so insignificant that I prefer leaving both the species in the same genus.

#### Review of the Species.

A. Hindwing beneath without a round black spot in area 1 b near the posterior angle. Wings above with a grey ground-colour; forewing with distinct, sharply defined hyaline spots; hindwing without distinct hyaline spots. — ♂ anterior hip with a very long black hair-pencil appressed behind to the thorax. — *Caprona* Wallengr.

α. Hindwing beneath without a round, distinctly prominent, black spot in the area 1 c. *C. pillaana*.

β. Hindwing beneath in the centre of area 1 c, almost opposite the base of vein 2, with a rounded black spot. *C. adelica*.

B. Hindwing beneath in area 1 b near the margin with a rounded black spot. Both wings with a white ground-colour, brown or black markings and grey hyaline spots. — ♂ anterior hip without a hair-pencil. — Subgenus: *Netrobalane* Mab. *C. canopus*.

*pillaana*. **C. pillaana** Wallengr. (= heterogyna Mab.) (76 i). The marking of the upperside is shown by the figure. Beneath the wings are much paler with indistinct markings. Natal to Damaraland and Rhodesia.

*adelica*. **C. adelica** Karsch only differs from *pillaana* in the spot in 1 c of the hindwing beneath and the more roundish margin of the hindwing. Togoland. — **cassualalla** B.-Bak. The author later on considers this form to be a variegated form of *adelica*; his description in all its details exactly corresponds with the type of *pillaana* from which it is apparently only distinguished by somewhat more ferruginous-brown colouring at the base and distal margin of the hindwing above. Nothing is mentioned of the black dot in 1 c on the underside.

*kordofani*. Angola. — **kordofani** B.-Bak. The short description says: „Head, thorax, abdomen, and the wings very pale reddish-grey with the usual markings of *adelica*; the broad light central area, however, is more or less filled up with small streaks or lines.“ Kordofan (?).

*canopus*. **C. canopus** Trim. (76 i). The markings above are exactly reproduced in the figure; the dark spots are in the ♂ more blackish, in the ♀ browner. Beneath the dark markings at the bases of both wings are absent. Cape Colony to Transvaal.

#### 5. Genus: **Procampta** Holl.

„Palpi moderately long, slender, porrect, appressed; second joint densely haired; last joint slender. Forewing at the base rounded, at the centre of the costal margin convex, and before the apex slightly emarginated; the apex is transversely truncate and the distal margin then almost straight; posterior angle not rounded; posterior margin straight. Hindwing pear-shaped with a very round distal margin.“

*rara*. **P. rara** Holl. (76 g). Wings above and beneath dark brown (beneath somewhat lighter) with transverse rows of angular black spots. Forewing with a spot in the apex of the discal cell, a slanting straight row of discal spots from the apex to the posterior margin and a series of submarginal spots; besides with a black spot in 1 b and 1 or 2 behind the cell near the costal margin. Forewing with a minute hyaline dot in the cell and three in a triangle before the apex in 6 to 8. Hindwing with three bent transverse rows of black spots. Ogowe Valley.



6. Genus: **Tagiades** Hbn.

Last palpal joint short, knob-shaped or coniform. Vein 2 of the forewing arises before the centre of the cell, 5 midway between 4 and 6, 11 and 12 are broadly separated. Vein 5 of the hindwing is distinct, the border at the apex not emarginated.

Head above with some minute white dots. Forewing with a hyaline spot in area 11 and sometimes also in 12. Hindwing beneath for the greatest part white.

## Review of the Species.

A. Hindwing above dark-coloured, without a white area. Abdomen above dark brown.

α. Margin of hindwing almost uniformly rounded off. Larger species of 40 to 47 mm. *T. flesus*.

β. Margin of hindwing between the veins 6 and 7 somewhat projecting, then almost straight as far as vein 1 b. Smaller species of about 35 to 38 mm.

\*. Forewing beneath at the base of the costal margin not white. Hindwing beneath with a coherent dark costal-marginal band and behind the centre in 1 c to 6 with a series of black discal spots situate near the dark marginal band; besides there are two black spots in area 7, but otherwise no dark spots in the white colour. *T. insularis*.

\*\* Forewing beneath at the base of the costal margin white. Wings above lighter brown, hindwing with three transverse rows of black spots occurring also beneath in the white colour. Hindwing beneath at the costal margin only dusted black.

B. Hindwing also above for the greatest part white, only at the base and costal margin black. Abdomen above at the base black, then white. *T. lacteus*.

**T. flesus** F. (= ophion Dr.) (76 c). Forewing with hyaline spots or hyaline dots in 2 to 8 and 11 and in the discal cell (2), but never in 1 b; the spots in 4 and 5 generally small or absent. Hindwing above in the marginal half in the ♂ bluish-grey with a distinct transverse band of dark spots, in the ♀ lighter grey with indistinct spots. Sierra Leone to Natal and Usambara in East Africa.

**T. insularis** Mab. (= ophion Bsd.) (76 c) only differs from *flesus* in the marks stated in the review. *insularis*. The hyaline spots of the forewing are often minute, sometimes there occurs a dot in 1 b. Madagascar.

**T. smithi** Mab. (? = samborana Smith) is only known to me from the description, but distinguished from *insularis* by the marks stated above. *T. samborana*, according to SMITH's description, cannot be distinguished from *T. smithi* and is probably the same species which was probably twice described from specimens in the Collection of GROSE-SMITH. Madagascar.

**T. lacteus** Mab. (= dannatti Ehrm.) (76 c) needs no further description. Liberia and Congo District. *tacteus*.

7. Genus: **Calleagris** gen. nov.

Last palpal joint long, porrect. Forewing: vein 2 arises before the centre of the cell, 3 near the posterior angle, 5 midway between 4 and 6, 11 is broadly separated from 12. Hindwing: vein 2 arises somewhat behind the centre of the cell, 3 near the posterior angle, 5 is distinct. Margin of hindwing rounded off, but deeply emarginated between the veins 4 and 6. — ♂ forewing without a costal fold, but hind tibiae with a hair-pencil.

This new genus differs considerably from *Eagris* in the formation of the palpi and the marking.

**C. jamesoni** E.-Sh. (76 d). The figure clearly shows the colouring and marking of this distinct species. *jamesoni*. The hyaline spots of the forewing are mostly roundish and encircled with black; they occur in the discal cell (a single one) and in the areas 1 b to 8. Last palpal joint black. The ground-colour of the forewing above is in the rainy season form darker, browner than in the dry season form. Damara and Mashona Land. Rhodesia. — **kigonserensis** Wichgr. „Forewing mouse-coloured with brown irroration, particularly inwardly and at the posterior margin.“ „The large white spot at the end of the cell is not so round as in the specimens from Lake Tanganyika, but somewhat more square.“ The hyaline spots in 1 b and 2 have the form of one large coherent spot. East Africa; Kigonsera. *kigonserensis*.

8. Genus: **Eagris** Gn.

Last palpal joint moderately long or short, coniform. Forewing: vein 2 arises near the base of the cell, 5 somewhat nearer to 6 than to 4, 11 is quite separate. Hindwing: vein 2 a little behind the centre of the cell, 5 distinct. The border of the hindwing is emarginated between the veins 4 and 6. — ♂ forewing with a costal fold. Hind tibiae with hair-pencils. First joint of posterior tarsi above hairy. — ♀ abdomen with anal wool.

## Review of the Species.

A. Hindwing beneath with a dark brown, yellowish-brown, yellow, or pale yellow (but never white) ground-colour.

α. Hindwing without any hyaline spots.

\*. ♂. Wings on both sides with a blackish-brown ground-colour and rather indistinct black discal and median spots. Forewing with but two hyaline dots in 7 and 8. Palpi below of a bright ferruginous colour. — ♀. Wings above dull pale reddish-brown with black-ringed hyaline spots in nearly all the areas. Both wings beneath with a whitish marginal line. *E. nottoana*.

\*\*. Forewing with numerous hyaline spots and a brownish-yellow, yellow or grey ground-colour. Wings beneath without a whitish marginal line.

§. Hindwing above at the distal margin as dark as the ground-colour or at least with dark markings.

o. Hindwing beneath at the costal margin in the areas 7 and 8 coloured like the ground (yellow or brownish-yellow), but in 7 with 1 or 2 black spots.

1. Hindwing beneath with a darker (♂) or lighter (♀) brownish-yellow ground-colour. — ♂. Hyaline spots of forewing small or partly absent. *E. sabadius*.

2. Hindwing beneath with a pure, light-yellow ground-colour. Hyaline spots of forewing in both sexes large and numerous. *E. astoria*.

oo. Hindwing beneath at the costal margin irrorated with dark, or with a dark costal-marginal band.

1. Wings above with a dark brown ground-colour. Hindwing beneath with a bright yellow ground-colour. *E. decastigma*.

2. Wings above brownish-grey, in the centre somewhat lighter yellowish. Hindwing beneath with a yellowish-grey ground-colour. *E. ochreana*.

§§. Hindwing above at the distal margin between the anal angle and vein 2 (or 3 or 4) broadly whitish yellow or greyish yellow without markings. *E. denuba*.

β. Hindwing with a large hyaline spot in the discal cell and smaller hyaline spots in 1 b and 7. *E. landbecki*.

B. Hindwing beneath with a pure white ground-colour and dark costal-marginal band, without hyaline spots.

α. The hyaline spot in area 2 of the forewing is large and oblong, its proximal end is situate right behind the second spot of the discal cell. Hindwing above at the margin not or scarcely lighter. *E. phyllophila*.

β. The hyaline spot in area 2 of the forewing is slantingly transverse and situate much more towards the margin than the spots of the discal cell and right behind the spot in 3. Hindwing above at the centre of the margin broadly light grey. *E. fuscata*.

*nottoana*. **E. nottoana** Wallengr. (= *melancholica* Mab.) (76 d) is in the male very dark, and the forewing only shows two hyaline dots. The ♀ which is unknown to me is much lighter and in the review above described according to TRIMEN. Cape Colony to Delagoa Bay.

*sabadius*. **E. sabadius** Gray (= *andracne* Bsd., *hyalinata* Saalm.) (76 c, d). In the ♂ the wings above are almost monotonously brown with the same black spots as in the ♀, though much smaller and more indistinct. The hyaline spots of the forewing are also the same as in the ♀, but small and punctiform or absent, and only represented by their black surroundings. The underside is of a bright brownish-yellow (darker than in the ♀) with black discal spots of the hindwing. The marking of the ♀ is to be seen from the figure. Madagascar. —

*mauritiana*. **mauritiana** Mab. and *Boull.* only differs in the ♂ exhibiting still smaller hyaline dots of the forewing or one at all, and in the black discal spots on the hindwing beneath being likewise minute or absent. Mauritius.

*aldabrana*. Madagascar. — **aldabrana** Fryer is somewhat smaller and lighter than the nomenclatural form, but otherwise it corresponds with it. Isle of Aldabra.

*astoria*. **E. astoria** Holl. (= *epira* Karsch, *plicata* Btlr.). Forewing with two, in the ♂ separated, in the ♀ united hyaline spots in the discal cell and hyaline spots in 1 c to 9 and 11; of these spots 2 are in 1 b, being situate in a straight line with those in 2 and 3, whilst those in 4 and 5 are minute or sometimes absent.

*decastigma*. **E. decastigma** Mab. (76 d) is easily recognizable by the description in the review and the figure. Sierra Leone to Gabun.



**E. ochreana** *Lathy* is distinguished by the much lighter ground-colour of both wings. The forewing *ochreana*, shows hyaline spots in 1 b to 3, 6 to 9, and in 11, and the usual two spots in the discal cell. The discal spots 4 and 5 are, at least in the typical specimen, only represented by black spots. Nyassa Land.

**E. denuba** *Plötz* (= *decolor Mab.*) (76 d, e). The light ground-colour of the hindwing is generally a *denuba*, pure whitish yellow, not light grey as in the figures. The forewing exhibits the usual two hyaline spots each in the discal cell and in 1 b, and one each in 2 to 9 and in 11; the spot in 2 is large, almost square, and is more remote towards the base than the spot in 3, right behind the second spot of the cell. Hindwing above at the base, at the hind-margin, costal margin and apex dark grey or brown; it shows two black spots in area 7, one each in 4 to 6, and two small or indistinct ones in 1 c. Sierra Leone to Cameroon.

**E. lucetia** *Hew.* (76 f). This distinct and rare species is only known to me from the figure of the upper- *lucetia*, side and could therefore not be ranged in the review. Angola. Rhodesia.

**E. landbecki** *H.-Drc.* (76 e) is distinguished from the other species by the hyaline spots of the hindwing. *landbecki*. The forewing shows one hyaline spot or dot each in 1 b to 9 and in 11, and two in the discal cell. From the other species it is also distinguished by the area 1 b showing but one spot and by the spots 1 to 4 being situate in a straight line towards the apex of the wing. It is doubtful whether it is a genuine *Eagris*. Congo District on the Kassai River.

**E. phyllophila** *Trim.* (= *ophion Wallengr.*) (76 c, d) is easily recognized by the figure. Natal. De- *phyllophila*, lagoon Bay.

**E. fuscosa** *Holl.* (76 d) is easily discernible from *E. phyllophila* by the marks stated in the review. *fuscosa*. Ogowe Valley.

## 9. Genus: **Sarangesa** *Mr.*

This genus is very badly defined from the other genera. But as I have no time nor material at present for making a revision of the genus, I follow rather closely the classification of the species hitherto maintained.

### Review of the Groups of Species.

- A. Margin of hindwing deeply emarginated between the veins 4 and 6, fringes at the said veins prolonged, dentiformly extended. Median of forewing between the veins 2 and 3 quite straight; lower discocellular of forewing straight and almost vertically placed towards vein 4. — ♂ posterior tibiae with a long hair-pencil. First joint of posterior tarsi with appressed scales, without hairs. — *Eretis Mab.* First Group.
- B. Margin of hindwing uniformly bent, between the veins 4 and 6 not or only slightly emarginated; fringes equally broad, undulate or almost entirely margined. The median of the forewing is slightly bent between the veins 2 and 3.
  - α. Vein 5 arises in both wings distinctly nearer to 6 than to 4; the anterior discocellular of the forewing is of a slanting position. — ♂ posterior tibiae with a hair-pencil. First joint of posterior tarsi above hairy. Second Group.
  - β. Vein 5 arises in both wings midway between 4 and 6; the lower discocellular of the forewing is straight and almost vertical towards the vein 4.
    - \*. ♂. Posterior tibiae on the back part covered with long hair, but without a real pencil. First joint of posterior tarsi with appressed scales, but no hair. — *Hyda Mab.* Third Group.
    - \*\* . ♂. Posterior tibiae with a long hair-pencil. First joint of the posterior tarsi above hairy. (I am not certain whether this is the case in all the species.) Fourth Group.

### First Group of Species.

The species of this group, on an average, are smaller, with broader wings than those of the second and fourth groups, and particularly distinguished by the irregular, dentate margin of the hindwing. The margin of the forewing is also more or less emarginated between the veins 1 and 2. Hindwing without hyaline spots; forewing usually with small hyaline spots in 1 b, 2, 3, 6 to 8 and 11, but rarely in the discal cell. Wings above dark brownish-grey with black spots arranged in transverse bands or transverse rows. The ♀♀ show a lighter ground-colour and more distinct marking.

## Review of the Species.

A. Discal cell of forewing without hyaline spots or rather far before its apex with 1 or 2 hyaline dots.

α. Wings beneath with a reddish-yellow, red-brown, or yellowish-brown ground-colour, or at least with some such spots between the dark spots.

\*. Veins not darker than the ground-colour.

1. Forewing with hyaline spots in (1 b), 2, 3, 6 to 8, (10), 11.

*S. djaelaclae*.

2. Forewing only with three hyaline dots (in 6 to 8).

*S. melania*.

\*\* . Veins of both wings black, particularly beneath very distinctly prominent.

*S. nox*.

β. Wings beneath with a dark grey or blackish-brown ground-colour and without lighter reddish spots.

\*. Forewing without hyaline dots in the discal cell.

§. Forewing with three subapical hyaline dots (in 6 to 8) and besides with hyaline spots in 2, 3, 10, and 11.

*S. lugens*.

*S. ganyi*.

§§. Forewing without any other hyaline spots but two subapical dots (in 7 and 8).

*S. perpaupera*.

\*\* . Forewing in the discal cell with 2 hyaline dots, both of which are situate more towards the base than the spot in 2.

*S. herewardi*.

B. Discal cell of forewing close at its apex with a white transverse streak.

*S. exprompta*.

*djaelaclae*. **S. djaelaclae** Wallengr. (= umbra Trim.) (76 h) is particularly distinguished by its reddish underside and the numerous hyaline spots of the forewing; its discal cell is generally without hyaline spots, rarely with an indistinct hyaline dot. South Africa to Angola, Somali Land, and Abyssinia, also in Senegambia. — In specimens from East Africa the reddish colour beneath is darker and more or less broken up into spots: **maculifera** Mab. & Boull. — **punctigera** Mab. & Boull. differs only in the hyaline spot of the area 2 on the forewing being larger. British East Africa.

*melania*. **S. melania** Mab. is very closely allied to the preceding species and, according to the description, only differs in the ♂ forewing exhibiting no other hyaline spots but the three subapical dots and the underside being darker. In the ♀ there occur hyaline spots also in (1 b) 2 and 3. Gabun, Togo Land.

*nox*. **S. nox** Neave is distinguished by the black veins and the dark brown underside on which the hindwing shows only a faint, dark red-brown hue and the forewing three red-brown spots in 4, 5, and in the discal cell. Rhodesia.

*lugens*. **S. lugens** Rog. (♂ = morosa Rog.) (76 h, as *lucens*) differs from *djaelaclae* merely by the marks stated in the review. In the ♂, like in that of *djaelaclae*, the outside of the anterior femora and the anterior tibiae are covered with white scales or hairs. „German“ and British East Africa to Ruwenzori.

*ganyi*. **S. ganyi** B.-Bak. is unknown to me, but according to the description it must be very similar to *S. lugens*: „♂. Both wings dark grey; first two thirds of forewing darker; a double hyaline dot at the base of vein 11, and another double spot at the angle of vein 3; three small dots not in a straight line at the costal margin nearer to the apex of the wing; behind them the traces of a postmedian row of spots which are scarcely darker than the ground-colour; hindwing likewise with traces of a subbasal and of a postdiscal row of spots being scarcely darker than the ground-colour. Beneath as above, but with somewhat more distinct markings. The ♀ is similar to the ♀, but with a much larger hyaline spot in 2 and more distinct dark bands.“ Acholi Land.

*perpaupera*. **S. perpaupera** Holl. (76 h) only differs from *S. lugens* in the hyaline dots of the forewing being reduced to two. Sierra Leone to Gabun.

*herewardi*. **S. herewardi** Riley is somewhat larger than all the preceding species of this group and exhibits above a bronze-like reflection. Forewing with 7 hyaline spots: 2 in the discal cell between the bases of the veins 3 and 11, and one each in 2, 3, 6 to 8, that in 2 being the largest. Two rounded dark basal spots in 1 b and several other dark spots or transverse bands like in the other species. Both wings beneath at the margin of a somewhat lighter colour. Rhodesia.

*exprompta*. **S. exprompta** Holl. (76 g, as *djaelaclae*) differs from the other species in the white, hyaline transverse streak in the discal cell of the forewing. The latter besides with hyaline spots in 1 b to 3, 6 to 8, and 11. The underside is paler than the upperside and more or less spotted reddish. Gold Coast. Abyssinia.



### Second Group of Species.

The only species of this group differs also in the marking from the other species, the hindwing being on both sides decorated with the dark brown, white-centred dots, three of which are in the basal part (in 1 c, 7, and the cell), the 8 others forming a bent discal row (in 1 b to 7). Forewing with 2 similar basal dots in 1 b and besides with hyaline spots in (1 b), 2, 3, 6 to 8, and in the discal cell; the two spots in the cell are sometimes combined into one. Forewing elongate with an almost rectangular apex.

**S. hollandi** *Btlr.* Wings above monotonously brown without dark markings, beneath the basal part *hollandi*. of the forewing, and the hindwing almost entirely clothed with pale violettish-grey scales. Abdomen and palpi above brown, beneath whitish-grey. Nyassa Land; Rhodesia and Kigonsera in East Africa.

### Third Group of Species.

By their size and shape of the wings the species of this group approximate those of the first group. Antennae with white rings and a long thin club.

### Review of the Species.

A. Forewing with hyaline spots of unequal size, many of which are angular or irregular; the discal cell with two hyaline spots which are often united into a transverse spot. Both wings with distinct black spots on a somewhat lighter ground.

α. Ground-colour of both wings (but not the black spots) on both sides, particularly above, strewn with greyish-blue scales. *S. grisea*.

β. Wings almost without any bluish scales at all.

\*. The hyaline spot in the discal cell of the forewing is transverse or composed of two spots.

*S. majorella*.

\*\*. The hyaline spot in the discal cell of the forewing is irregular angularly broken and usually forms three points one of which points towards the distal margin. *S. tricerata*.

B. Wings very densely scaled. Forewing only with minute though numerous, equally sized hyaline dots. Hindwing with similar, whitish, but not transparent, often very indistinct dots. Fringes of the wings broad. Both wings with minute light marginal dots between the ends of the veins.

α. Fringes of the wings light-spotted. *S. astrigera*.

β. Fringes of the wings without light spots. *S. neavei*.

**S. grisea** *Hew.* (= *micacea Mab.*) (76 g) can be distinguished from all the other species by the greyish-blue scaling of the wings and body. Forewing with hyaline spots in 2, 3, 6 to 8, 11, and two such spots often united in the discal cell. Liberia to Gabun.

**S. majorella** *Mab.* (= *motozi Karsch*) (76 g). Forewing with the same hyaline spots as in *grisea* and besides often with 1 or 2 hyaline dots in 1 b; the hyaline spots, particularly that in 2, are often larger than in *grisea*. On being slightly magnified, the upper surface of the wings proves to be scantily strewn with small light grey scales, whilst at the apex of the forewing they are somewhat more densely strewn. Sierra Leone.

**S. tricerata** *Mab.* (76 g) only differs in the shape of the hyaline spot in the discal cell of the forewing; it may only be a variation of *S. majorella*. Sierra Leone.

**S. astrigera** *Btlr.* (76 h). Forewing generally with light dots in 1 b to 8, 11, and in the discal cell, often also with two basal dots in 1 b. Hindwing at least with one dot in the cell and a bent row of discal dots, often also with some other dots. Nyassa Land. Rhodesia. — **neavei** *Riley* seems only to differ in the darker colour of the wings, the fringes being spotless. Rhodesia.

### Fourth Group of Species.

Of the numerous species of this group many are not at hand, for which reason I am forced to base the following review merely on the colouring.

### Review of the Species.

I. Hindwing above as far as the margin with a dark ground-colour, without a light marginal band.

A. Hindwing beneath with a dark ground-colour, or rarely with a yellow ground-colour, but with a complete dark macular marking.

- α. Hindwing with a rounded hyaline spot at the end of the discal cell. The hyaline spots 2 and 3 of the forewing are large and angular. *S. motozi*.
- β. Hindwing without hyaline spots or with but one hyaline dot far before the apex of the cell.
  - \*. Hyaline spot 2 of forewing large and quadrangular.
    - 1. Hindwing beneath dark brown with large, quadrangular black spots being only separated by the veins and arranged in 4 transverse rows. *S. haplopa*.
    - 2. Hindwing on both sides with yellow spots. *S. motozioides*.
  - \*\*.
  - §. Forewing above without a distinct black median transverse band.
    - o. Wings beneath dark brown or blackish without yellow spots or at most before the margin of the hindwing somewhat lighter yellowish.
      - †. The hyaline spots 2 (strigiform) and 3 of the forewing are as usual near the discal cell; those of the areas 4 and 5 are absent.
        - 1. Forewing with a hyaline dot in 11, but without such a dot in the discal cell. *S. plistonius*.
        - 2. Forewing without a hyaline dot in 11; at least in the ♀ with a hyaline dot in the discal cell. *S. lucidella*.
      - ††. Forewing in the areas 1 b to 8 with hyaline spots which are in the areas 1 b to 5 much nearer to the margin than is usually the case.
        - 1. All the hyaline spots of the forewing are punctiform. Hindwing with yellowish fringes which are black at the ends of the veins. *S. kobela*.
        - 2. The hyaline spot 2 of the forewing is narrowly angularly broken, that in 3 strigiform. *S. lunula*.
    - oo. At least the hindwing beneath with a bright ochreous ground-colour and transverse rows of distinct dark spots. *S. maxima*.  
*S. pandaensis*.
  - §§. Forewing above in the centre from the costal margin to vein 1 with a black or blackish transverse band which is distally distinctly defined, proximally indistinctly defined and in the areas 2 and 3 distally bent, at the distal edge of this band are the hyaline spots in 2 and in the discal cell, in case they be present at all. Forewing besides at the costal margin exactly within the subapical dots with a large dark costal-marginal spot of a square or rhomboid shape.
    - 1. Hindwing beneath with a dark grey ground-colour with or without a slight yellowish hue. Costal-marginal spot of forewing in the areas 4 and 5 extended into a coniform point. *S. laelius*.
    - 2. Hindwing beneath with a bright ochreous ground-colour and curved transverse rows of dark spots. Costal-marginal spot of forewing at vein 5 almost rectangularly broken. *S. eliminata*.
- B. Hindwing beneath with a pale yellow or white ground-colour and more or less reduced dark spots.
  - α. Hindwing beneath with a light yellow ground-colour. *S. bouvieri*.  
*S. princei*.  
*S. tsava*.  
*S. hypoxanthina*.  
*S. seineri*.
  - β. Hindwing beneath with a bluish white or pure white ground-colour.
    - \*. Hyaline spot 2 of forewing small, punctiform or strigiform.
      - o. Discal cell of forewing with two hyaline dots.
        - 1. Hindwing beneath with a bluish white ground-colour and dark fringes; above also in 1 e to 3 and the cell with dark spots. *S. thecla*.
        - 2. Hindwing beneath with a pure white ground-colour, only at the base bluish, and white fringes. Above without dark spots in the areas 1 a to 3. *S. theclides*.
      - oo. Discal cell of forewing without a hyaline dot or only with one hyaline dot. *S. subalbida*.
    - \*\*.
- II. Hindwing above at the margin between the anal angle and vein 6 or 7 with a (broad) yellow or orange marginal band. Hyaline spot 2 of forewing punctiform or entirely absent.
  - α. Marginal band of hindwing above narrow and short, beneath lighter, but much broader, reaching to the apex of the discal cell and to vein 6, and decorated with some black discal spots. Forewing only with three hyaline dots (in 6 to 8). *S. brigidella*.



- β. Marginal band of hindwing above 3 to 6 mm broad, extended from the hind-margin to vein 6. Forewing with 5 to 8 hyaline dots. Hindwing beneath almost to the base and costal margin orange or yellow.
1. Marginal band of hindwing above only 3 to 4 mm broad orange (♂) or pale yellow (♀). *S. brigida*.
  2. Marginal band of hindwing above about 6 mm broad and with black discal spots in 4 and 5. *S. hereus*.

**S. motozi** Wallengr. (= *pato* Trim., *helmi* Karsch, ♀ = *pertusa* Mab.) (76 e) differs from all the other *motozi* species in the hyaline spot in the centre of the hindwing. Forewing with hyaline spots in 2, 3, 6 to 8, 11, and with a frequently large transverse spot in the discal cell; sometimes also with 1 or 2 spots in 1 b. Under surface particularly of hindwing spotted yellow. Cape Colony to Angola, Somali Land, and Abyssinia. Senegambia. — **ophthalmica** Mab. only differs in the yellow spots beneath being better developed and occurring also on the forewing above. Delagoa Bay. — **ophthalmicodes** Strd. is based upon a ♀ in which the hyaline spot of the hindwing is punctiform. German East Africa: Mkatta. *ophthalmica*. *ophthalmicodes*.

**S. motozioides** Holl. is unknown to me, but it may be determined according to the marks stated in the review. Ogowe Valley and British East Africa. *motozioides*.

**S. haplopa** Swh. (76 g, as *haploa*). The figure does not necessitate any further description. Ruwenzori. *haplopa*.

**S. plistonicus** Plötz (76 g) is very much like the following *lucidella*. Hindwing on both sides with more numerous and more distinct dark spots. Gold Coast to Rhodesia. Figure copied from PLÖTZ. *plistonicus*.

**S. lucidella** Mab. (76 e) only differs from *plistonicus* in the marks already mentioned above. German East Africa. *lucidella*.

**S. kobela** Trim. (76 f). The marking above is to be seen from the figure. Beneath some of the light dots of the upper surface are often absent, and the hindwing shows a curved transverse row of black, often white-centred discal spots which are sometimes also visible above. Cape Colony to Transvaal. *kobela*.

**S. lunula** H.-Dre. (76 g). Hindwing on both sides with a black marginal band, above in the centre but very faintly lighter, beneath somewhat more distinctly lighter brownish-yellow, so that the large black spots become visible. In the figure the hindwings are too dark. Congo District: Kassai. *lunula*.

**S. maxima** Neave. Forewing with one hyaline dot each in the discal cell and in the areas 2, 3, 6 to 8, beneath with ochreous spots in the cell, at the base of the areas 4 and 5 and behind the centre with a transverse row of angular yellow spots in 1 b to 7; at the margin on each side of the folds with a yellowish dot. Hindwing above greyish-brown, with distinct black spots: one basal spot each in 1 c, 7 and the cell, a median spot at the apex of the cell, discal spots in 1 c to 7, and submarginal spots in the same areas. Hindwing beneath with the very same spots distinctly contrasting with the bright yellow ground-colour. Rhodesia. — **flava** Riley differs in both wings above showing large angular orange spots, and is considered as the dry season form. Rhodesia. *maxima*. *flava*.

**S. pandaensis** Joicey & Talbot. Upperside black, densely strewn with greyish-brown scales, and with spots of that colour. Forewing with one hyaline dot each in the cell and in 1 b, 2, 3, 6, 8, greyish-brown spots and a grey marginal line. Hindwing with the usual transverse rows of greyish-brown spots. Forewing beneath with a black ground-colour and yellow spots, like in *maxima*. Hindwing beneath blackish-brown with transverse rows of orange spots. Congo District: Lufira Valley. *pandaensis*.

**S. laelius** Mab. (= *synestalmenus* Karsch) is somewhat larger than the following species and at once discernible by the dark under surface. Forewing with hyaline spots in 2 and 3. Togo Land to Gabun. — **tristis** Rbl. (76 f as *laelius*). Forewing without hyaline spots in 2 and 3. East Africa: Bukoba. — **laelioides** Riley is darker, and both wings beneath at the margin broadly lighter yellowish-grey; the number of hyaline dots on the forewing varies. Rhodesia. *laelius*. *tristis*. *laelioides*.

**S. eliminata** Holl. (76 f). Forewing generally with hyaline dots in 2, 3, 6 to 8 and in the cell at the anterior margin. Hindwing above with indistinct dark spots. Both wings beneath with a yellow ground-colour and rows of dark spots. German East Africa to Abyssinia. — **deserticola** Rbl. is the dry season and desert form. It only differs in the more olive green ground-colour above and the lighter yellow ground-colour beneath. Sahara; Sudan; Kordofan; Arabia. *eliminata*. *deserticola*.

The following five species (?) exhibiting a yellow under surface of the hindwing with reduced dark markings, I unfortunately only know from the descriptions and figures. I was therefore unable to distinguish them more accurately in the review and can merely repeat here the most important statements of the descriptions.

**S. bouvieri** Mab. (= *philotimus* Plötz, *motozioides* ♂ Holl.) (76 e; the original figure of *philotimus* Plötz). Forewing with two hyaline dots in the discal cell and one each in 2, 3, 6 to 8, 11. PLÖTZ in his description does not say anything about the dark submarginal dots surrounded with a light colour on the forewing above. *bouvieri*.



MABILLE's description of *bouvieri* and HOLLAND's description of *motozioides* still less fit the present figure. SWINHÖE, however, unhesitatingly united (1908) *bouvieri* and *philotimus* as the same species. I cannot decide upon this question. Gold Coast, Togo Land, Gabun, Congo District.

*princei*. **S. princei** Karsch. „Wings above brownish-grey, with the same marking and spotting as in *S. bouvieri* Mab. (*motozioides* Holl. ♂), but the cell of the forewing does not exhibit two hyaline spots, but only one, viz. the anterior hyaline spot. Wings beneath brownish-yellow, silky; forewing with the 6 hyaline spots of the upperside and besides a semi-diaphanous spot in 11. Hindwing with two undulate, brown curved rifflings parallel to the distal margin, one on this side and one on the other side of the centre; each of them proximally borders on a yellow-scaled spot, the proximal arcuate line on the spot near the cell-end, the distal arcuate line on the spot between 4 and 6; more anteriorly, between the veins 7 and 8, a prominent, yellow-scaled punctiform spot forms, with the two other spots, the angles of a triangle. Expanse 34 mm.“ German East Africa.

*tsava*. **S. tsava** B.-Bak. „Both wings dark brown; forewing with a yellowish-brown spot at the cell-end; the centre is blackish and with a blackish spot behind the yellowish-brown spot and four hyaline dots at the costal margin; two hyaline dots at the costal margin opposite the apex of the cell, the posterior dot touching the yellow spot; hyaline spots in 2 and 3; marginal area feebly yellowish. Hindwing with traces of a dark postmedian line, outside of which the margin is feebly yellowish. Forewing beneath lighter than above, the yellowish-brown spot of the upperside being ochreous. Hindwing beneath ochreous with a grey base and costal margin, and a dark grey apical spot; a dark median line and an indistinctly defined dark grey postmedian line; marginal line dark; fringes light with a dark median line.“ Expanse 34 mm. British East Africa: Tsavo River.

*hypoxanthina*. **S. hypoxanthina** Mab. & Boull. „Forewing black, particularly at the base strewn with fine yellow scales; 11 light yellow hyaline spots: 5 at the apex (probably in 4 to 8) and 6 in the centre, a large one of which is in the cell, one each in 2, 3, 11, and 2 in 1 b. Hindwing above brown with three transverse rows of large, yellow-haired spots. The middle transverse row exhibits the cellular spot larger and more yellow. Forewing beneath black, the spots a little larger than above; the two small dots in 1 b border on a large yellow spot covering the whole posterior angle and being continued along the margin. Hindwing beneath of a bright yellow, at the base narrowly black, with a black spot in the discal cell and a semicircularly curved row of 6 discal spots. Fringes yellow with black spots. Body above brown; abdomen with yellow rings.“ Expanse 30 mm. East Africa.

*seineri*. **S. seineri** Strd. „Size as well as colouring and marking above almost as in *S. maculata* Mab., but the shadow-like lighter markings above somewhat more distinct and lighter grey, a darker area at the apex of the hindwing, and the hyaline spots of the forewing somewhat different: the three subapical ones are about of the same size and almost form a straight row; at the apex of the cell there is a transverse spot in the posterior half triangularly shaped, in the centre narrowed, apparently formed by two confluent spots, situate directly at the small round subcostal spot and somewhat basally to it; the four other spots as in *S. maculata*, but the spot in cell 2 somewhat smaller, distally pointed like a short wedge, proximally, however, slightly emarginated, thus of a pentagonal or hexagonal shape. *S. seineri* is at once discernible from *S. maculata* by the under surface of the hindwing, the light parts being dull ochreous (in *S. maculata* whitish); the dark markings consist of two transverse rows of shadow-like, most indistinct spots, a similar diffuse patch at the apex, and probably also at the base. Body above black, beneath ochreous. Antennae black with fine white rings; club with a broader white ring at the base.“ Expanse 31 mm. Zambesi.

*thecla*. **S. thecla** Plötz (= *semialba* Mab.) (76 f?; colouring of the hindwing beneath incorrect, it ought to be bluish white). „Hindwing beneath pale blue, towards the base darker with a narrow grey costal margin, at the costal angle and in cell 7 one large brown spot each; a small one is situate towards the base in cell 7 and in the discal cell; 7 are situate in a curve behind the centre, and grey spots before the margin“ (according to PLÖTZ). Forewing with two hyaline dots in the discal cell and one each in 2 (strigiform), 3, 6 to 8, 11.

*theclides*. **S. theclides** Holl. (76 f) is at once recognisable from the figure. Gabun.

*subalbida*. **S. subalbida** Holl. (? 76 h). „Antennae and upperside of body black; underside of palpi and chest yellowish; legs and ventrum whitish. Both wings above grey and at the distal angle darkened blackish. Forewing with 7 minute white hyaline dots, 4 before the apex of the wing arranged almost in a square, and 3 in a discal row behind the centre. Forewing beneath almost as above, but lighter, and at the posterior margin whitish. Hindwing beneath bluish white, at the base dusted with a bluish grey, at the apex spotted black, and near the costal margin behind the centre with a small black spot.“ Ogowe Valley. The figure supplied here by SEITZ neither agrees well with the description nor with HOLLAND's black figure.

*maculata*. **S. maculata** Mab. above recalls *S. motozi* by the shape of the wings and the marking of the forewing, but it only shows two small hyaline dots in the discal cell and a much darker ground-colour. Hindwing be-



neath almost exactly coloured and marked like in *S. thecla*. Forewing with 2 hyaline dots in 1 b and one hyaline spot each in 2, 3, 6 to 8 and 11; that in 2 is large and square. Mozambique and Northern Congo District.

**S. subalbicans** B.-Bak. is unknown to me, but evidently closely allied to *S. maculata*. „Forewing light brownish; a small hyaline dot in the cell opposite vein 3 and one before it outside of the cell“ (in area 11?); „a similar subapical dot; a hyaline dot in 3, a large square one in 2, and two hyaline dots in 1 b; a dark submarginal band is angled behind the submarginal dot. Hindwing somewhat darker with traces of a dark median band and a postmedian row of dark spots. Hindwing beneath white with a brown costal margin; a small brown patch before the cell, and a large brown spot from which a curved line of spots extends to the vein 1 b; a small spot at the cell-end; two large united brown spots at the apex of the wing and traces of a row of dark submarginal spots.“ British East Africa. Kisumu.

The following three species were placed as doubtful to the genus *Trichosemeia*, although the ♂ lacks both the mealy spot of the hindwing and the hair-pencil of the forewing. I have no ♂♂ at hand, but it seems to me to be impossible to distinguish them from the genus *Sarangesa*.

**S. brigidella** Plötz (= *aurimargo* Holl.) (76 f, g, as *aurimargo*). Forewing on both sides uni-coloured blackish-brown without any other markings but three hyaline dots in 6 to 8, forming a triangle. Hindwing also blackish-brown, with an orange marginal band in the extent shown by the figures. Sierra Leone; Gabun; Niam-Niam.

**S. brigida** Plötz (76 h, i; according to Plötz). Forewing above dark brown with 5 hyaline dots, one each in 3, 6 to 8 and the cell, beneath with some large lighter spots. The marking of the hindwing may be seen from the figures. Cameroon.

**S. hereus** Drc. (76 i). The ♂ is unknown. In the ♀ the forewing shows 10 hyaline dots, one each in 2 to 9, 11 and in the cell. In a ♀ I have at hand the hyaline dots of the areas 2 to 5, 11 and of the discal cell are absent. Hindwing beneath marked almost the same as in *brigida* (76 h), but with a brimstone-like ground-colour. It may be a female form of *brigida*? Angola. Ituri.

## 10. Genus: **Trichosemeia** Holl.

This genus seems only to differ from *Sarangesa* in the secondary sexual marks of the ♂, and must therefore, in my opinion, not be retained as a separate genus (only as a subgenus of *Sarangesa*). A very remarkable fact, however, is that all the species have four subapical hyaline dots of the forewing (in 6 to 9). The dot in 9 is otherwise of very rare occurrence (cf. however *S. hereus*). Forewing in the ♂ above uni-coloured blackish, only with the 4 hyaline dots of the areas 6 to 9.

### Review of the Species.

A. Hindwing beneath with a bright yellow or orange ground-colour.

α. Hindwing above uni-coloured black without markings.

*T. tetrastigma*.

β. Hindwing above with a very broad yellow or orange marginal band.

*T. quaterna*.

B. Hindwing beneath with a greyish-yellow or pale olive-brown ground-colour with black fringes; area 1 b almost entirely darkened.

*T. sublivescens*.

**T. tetrastigma** Mab. ♂. Forewing on both sides monotonously blackish with minute hyaline dots in 4 to 9. Hindwing above black without markings, beneath bright yellow with black fringes, at the base and costal margin scarcely darkened, but with black rounded discal dots in 1 c, 4 to 7, and a similar basal dot in 7. ♀ unknown to me. Cameroon.

**T. quaterna** Mab. (76 h). ♂. ? Forewing on both sides black, only with four hyaline dots in 6 to 9. Hindwing above in the basal half black; in the marginal half yellow and orange with two jet-black marginal spots in 6 and 7; beneath the yellow colour is still more expanded, leaving free a large black spot in 7 and a small one in 6. Abdomen above with yellow rings. The ♀ (76 h) has longer and lighter forewings with hyaline dots in 1 b to 9, 11 and the cell. Sierra Leone.

**T. sublivescens** Holl. (76 h). HOLLAND's figure of the ♂ copied here makes any further description superfluous. The ♀, as far as I know, is not known. Matabele Land.

To this genus may also belong **tristifica** (76 b). It was figured from a specimen in the Berlin Museum without any statement as to the genus. The species is probably not yet described and entirely unknown to me, nor is its habitat known.

11. Genus: **Celaenorrhinus** Hbn.

This wide-spread genus containing many species is also represented by many species in the Ethiopical region. They all exhibit above a black or dark brown ground-colour with numerous, often large, yellow, or rarely white spots of the forewing and often also of the hindwing. The forewing often shows a basal spot in 1 b and sometimes also in 11 and 12, and discal spots in 1 b to 8, 11, 12, and in the discal cell; the spot in the cell consists of two large, invariably united spots. Hindwing above with one or several distinctly defined yellow spots or rarely without such spots, but as in many of the species of *Sarangesa*, with transverse rows of large dark spots distinctly contrasting with the somewhat lighter ground.

Forewing: vein 2 before the centre of the cell, 3 about just as distant from 4 as 4 is from 5, 5 in the centre between 4 and 6, 11 separate. Hindwing: vein 2 far behind the centre of the cell, 3 almost from the posterior angle, 5 distinct. Margin of hindwing between the veins 1 b and 3 almost straight or somewhat emarginated. Antennal club almost in the centre bent down with a long and sharp point. Terminal joint of palpus short coniform or knob-shaped. — ♂. Hind tibiae with a hair-pencil; first tarsal joint with appressed scales, without hairs.

## Review of the Species.

- I. The two discal spots of area 1 b of the forewing above are separated, touch each other only in one place, or they are united into a narrow transverse spot the anterior part of which is square or only slightly longer than broad.

A. All the spots of the forewing yellow, orange or honey-coloured, more or less transparent.

α. Hindwing above densely covered with rusty-brown hairs, with black veins, a black costal margin and black marginal band.

\*. Hindwing above without black spots in the rusty brown part.

*C. rutilans*.

\*\*.

*C. rutilans* v. *nigropunctatus*.

β. Hindwing above blackish-brown without rusty-brown hairs.

†. Hindwing above with one or several yellow spots.

\*. Hindwing above at or near the margin with bright yellow spots or with a yellow marginal area. Forewing almost invariably above with 2 or 3 basal spots (in 1 b, 11 [and 12]).

§. Hindwing with a large yellow marginal area covering at least the greatest part of the areas 2 to 5.

1. Forewing in 4 and 5 with yellow discal spots near the margin, which are united into a small transverse streak.

*C. galenus*.

2. Forewing without discal spots in the areas 4 and 5.

*C. homeyeri*.

§§. Hindwing in the areas 4 and 5 as far as the margin yellow, uni-coloured or with 1 or 2 black spots; the spot in 4 and 5 is often united with smaller yellow spots of the areas 3 and 6. Forewing generally with discal dots in 4 and 5.

1. The yellow spot of the areas 4 and 5 of the hindwing is not spotted, entirely filling up the two areas.

*C. intermixtus*.

2. The yellow spot of the areas 4 and 5 of the hindwing encloses two black spots sometimes dividing the yellow spot (almost) into two halves, an interior and an exterior half.

*C. biserialus*.

\*\*.

*C. mokeezi*.

††. Hindwing above without any yellow spots, on the somewhat lighter ground with transverse rows of dark spots.

*C. modestus*.

*C. bettoni*.

B. All the spots of the forewing white and transparent.

α. Hindwing just like in *C. mokeezi* (76 b) with a yellow central spot.

*C. humbloti*.

β. Hindwing without yellow spots, blackish-grey with transverse rows of black spots.

*C. proximus*.

- II. The discal spots of the area 1 b of the forewing above are always united into one spot; the anterior division of this spot is elongate, more than twice as long as it is broad.

A. The spots of the forewing are transparent, white. Hindwing above black without markings.

*C. macrostictus*.

B. All the spots of the forewing yellow or honey-coloured, more or less transparent.

α. The discal spot in 1 b of the forewing is only moderately long (generally only half the length of the spot in 2) and its posterior division much smaller than the anterior, square or streak-shaped.



\*. Forewing above with a very large square or rectangular yellow basal spot in area 1 b.

*E. meditrina* ♂.

\*\* The basal spot in area 1 b of the forewing is small, punctiform or strigiform, or absent altogether.

o. Forewing above with a basal spot in area 1 b.

1. Hindwing above behind the apex of the discal cell (in 4, 5) with a quadrangular yellow spot and with 5 to 7 distinct yellow submarginal spots. *C. meditrina* ♀.

2. Hindwing above without a yellow spot at the apex of the cell and without real yellow submarginal spots; instead of them only some indistinct spots formed by accumulated small yellowish bristles. *C. poeanus*.

oo. Forewing above without a basal spot in area 1 b. Hindwing above without a yellow spot in the basal part of the areas 4 and 5.

1. Hindwing above black without submarginal spots, but with a distinctly defined yellow marginal spot in 5 and 6, beneath black without spots. *C. atratus* ♂.

*C. plötz* ♂.

2. Hindwing above only with 3 to 5 separate, yellow submarginal spots in 2 to 6.

*C. atratus* ♀.

*C. perlustris*.

β. The two discal spots of the area 1 b of the forewing are entirely united forming a single, very large and long spot which is just as large as or larger than the spot in the discal cell and slightly shorter than the spot in 2.

\*. Hindwing above black with a large yellow marginal spot at or somewhat behind the apex, beneath without markings or only with some small yellow spots. The yellow discal spot 1 b of the forewing above extends towards the base not farther or but little farther than the spot in 2.

1. Forewing with discal spots in 3, 4, and 5. The yellow median transverse band of the forewing is very broad, in 2 about 7 mm, honey-coloured. The yellow marginal spot of the hindwing does not reach the costal margin. *C. boadicea*.

2. Forewing without discal spots in 3 to 5. The yellow median band of the forewing is only about 4½ mm broad, golden yellow. The marginal spot of the hindwing reaches the costal margin. *C. chrysoglossa*.

\*\* Hindwing above blackish-brown with yellow spots before the margin. The yellow discal spot in area 1 b of the forewing extends farther towards the base than the spot in 2 and almost reaches the base of vein 2. *C. illustris*.

**C. rutilans** *Mab.* (= *tergeminus* *Hew.*) (76 a; the red-brown hairing of the hindwing and at the base of the forewing is indistinctly visible). Forewing with a basal spot in 1 b and transparent discal spots in 1 b to 8 and the discal cell; the latter spot and that in 2 are very large; areas 11 and 12 somewhat before the centre of the costal margin with orange longitudinal streaks. Palpi beneath and legs yellowish; hind tibiae of the ♂ with a black hair-pencil. Abdomen black, above with red-brown hair. Hindwing beneath black, at the costal margin at least in 7 and 8 orange with three separate black spots, one in 8 and two in 7, besides often with yellow spots in the adjoining areas. A somewhat variable species, but distinctly separated from all the others. Cameroon to Congo. — **nigropunctatus** *B.-Bak.* (? = *woermanni* *Plötz*) is presumably only a race of *rutilans*, merely distinguished by somewhat shorter and broader wings and the dark spots of the hindwing above. The ♀, according to *REBEL*, lacks the discal spots 4 and 5 of the forewing. *PLÖTZ*' description of *C. woermanni* seems to me to fit better this form than the typical form. Congo District. *nigropunctatus*.

**C. galenus** *F.* (= *fulgens* *Mab.*) (76 a) is a wide-spread species easily recognized by the figure and the statements in the review. In the ♀ the yellow marginal spot of the hindwing is smaller and in the areas 2 and 3 more or less broken up into spots. Area 1 c, like in the ♂, with two pairs of yellow spots. Senegambia to Manica Land. — **alluaudi** *Mab. & Boull.* is said to differ in its larger size, a smaller yellow marginal spot decorated with two black dots in 4 and 5 on the hindwing, and more distinct other spots on it. It seems to me to coincide with *biseriatus*. Usambara. Kilimandjaro. *galenus*.

**C. homeyeri** *Plötz* only differs from *C. galenus* in its smaller size and the absence of the discal spots 4 and 5 of the forewing. Cameroon to Angola. *homeyeri*.

**C. intermixtus** *Auriv.* is very well distinguished by the distinctly defined, rectangular, bright yellow spot filling up the areas 4 and 5 of the hindwing; hindwing besides above only with small, separate or almost separate spots in 2, 3 and 5. Forewing with distinct, united discal spots in 4 and 5. Cameroon. — **opalinus** *Btlr.* only differs in the absence of the discal spots 4 and 5 of the forewing. Rhodesia. British East Africa. — **jeanneli** *Mab. & Boull.* forms an intermediary between *opalinus* and *intermixtus* by the forewing exhibiting one minute dot each in 4 and 5. British East Africa and Ituri. *intermixtus*.

**C. biseriatus** *Btlr.* (= *maculatus* *Hmps.*; *hoehneli* *Rog.*) (76 a ♀; ♂ as *maculatus*). Forewing with a basal spot in 1 b and discal spots in 4 and 5. The species is distinguished by the yellow spot of the areas 4 and *biseriatus*.



5 of the hindwing enclosing two small black dots which may also be united into a larger one; in the ♀ this black spot is often so large that it reaches the veins 4 and 6 and divides the yellow spot into yellow spots, one at the margin, the other at the base of the areas. East Africa.

- mokeezi*. **C. mokeezi** Wallengr. (= *amaponda* Trim.; separata Strd.) (76 b, as *mookezi*) differs from the other species in the discal spots 4 to 8 of the forewing uniting into an almost straight transverse band, in the other spots forming a narrow band, in the absence of all the basal spots, and the hindwing only having in the centre a yellow spot. STRAND based upon this species the new genus *Apallaga*, but he does not mention any differences between the new genus and *Celaenorrhinus*. — The larva lives on a species of *Justicia*, it has the usual shape of the body of the Hesperid larvae, a large dark red head and light green body with a whitish longitudinal line and two red spots on the first joint. Pupa light green with an obtuse apex of the head and some small black markings; sheath of spiral tongue longer than the abdomen, at the apex reddish. Cape Colony to Transvaal. — **C. kivuensis** Joic. & Talb. is somewhat smaller and shows the subapical band of the forewing interrupted in area 5. Kivu: Niragongo-Forest.
- modestus*. **C. modestus** Rbl. is distinguished by the dark, not yellow-spotted upper surface of the hindwing recalling that of *C. proximus* (75 b). Forewing with short, almost square spots in the cell and in 2; the discal spot in 5 is sometimes absent. Hindwing beneath with two transverse rows of bright yellow spots which are above only represented by faintly yellowish hairy spots. Expanse about 32 mm. Mashona Land.
- bettoni*. **C. bettoni** Btlr. is unknown to me, but BUTLER compares it with the Indian *C. ambareesa* Mr. (Vol. IX, pl. 164 a), and it is said to differ above only in the yellow hyaline spots of the forewing. Beneath the forewing is dark chocolate, the basal half of the costal margin being ochreous; the hyaline spots are edged with yellow; the median transverse band ends near the margin with a square spot in 1 b; anal margin whitish yellow. Hindwing beneath of a bright ochreous colour with numerous large dark grey spots. Expanse 38 mm. According to the description, this species must be similar to *C. modestus*, but larger. Massai Land.
- humbloti*. **C. humbloti** Mab. Forewing with large, almost square, white hyaline spots in 2 and in the discal cell, hyaline dots in 1 b (2 separate ones), 3 to 8, and a streak in 11 and 12. Underside of both wings entirely as above. Madagascar.
- proximus*. **C. proximus** Mab. (= *elmina* Plötz) (75 b) is easily discernible by the white spots of the forewing and by the hindwing above not being spotted light. Sierra Leone to Gabun.
- macrostictus*. **C. macrostictus** Holl. (76 b) resembles *proximus*, but it has much larger, fused discal spots in area 1 b of the forewing and entirely spotless hindwings. Ogowe Valley.
- meditrina*. **C. meditrina** Hew. (= *interniplaga* Mab.) (76 a, ♂). The sexes are very different. The ♂ is distinguished from the other species by the large yellow, not transparent basal spot of area 1 b and the broad yellow stripe in the basal part of the costal margin. The discal spots and particularly the discal spot in 1 b, however, are in both sexes almost quite similar. In the ♀ the basal spot in 1 b is small, punctiform. The hindwing shows 5 to 7 yellow submarginal spots in 1 b to 6, and 3 to 5 yellow discal spots being entirely separated from the submarginal spots in 2 to 5, of which those in 4 and 5 form a larger spot. Cameroon.
- pooanus*. **C. pooanus** Auriv. is somewhat smaller, but otherwise it only differs in the marking of the hindwing (cf. the review). Discal spot 3 of forewing is narrower, more strigiform. Island of Fernando Po.
- atratus*. **C. atratus** Mab. (= *collucens* Holl.) (76 a; ♂). The ♂ is easily discernible by the figure; the ♀ is very similar to that of *C. meditrina* and only differs in the differences stated in the review. Cameroon.
- plötzii*. **C. plötzii** Swb. „♂. Dark blackish-brown with a yellowish hue; upper part of antenna and club beneath ochreous. Forewing with a very broad ochreous median band not quite reaching the costal margin and posterior margin, and being a little narrower towards the costal margin; its proximal edge somewhat before the centre of the wing and almost straight, its distal side somewhat bent and anteriorly uneven; an orange subapical spot. Hindwing with a large orange apical spot. Under surface a little lighter; forewing as above; hindwing without spots. Palpi and frons orange; abdomen and legs beneath yellowish.“ Cameroon. It seems to differ from *C. atratus* ♂ in the absence of the discal spots 3 to 5 of the forewing. ♀ unknown.
- perlustris*. **C. perlustris** Rbl. „♂. The blackish-brown ground-colour of all the wings is dimmed by bright ochreous scales and hairs, only the costal margin of the hindwing remains purely black. The forewing exhibits a golden yellow median transverse band composed of four spots, shaped as in *biseriatus* Btlr. (76 a), but it is broader. Also the six subapical spots are arranged in the same way in three spots as in *biseriatus*. The hindwing is very much like *illustris* Mab. (76 b) in the scheme of markings, i. e. it only shows a marginal row of five golden yellow small spots and golden yellow fringes crossed by black at the veins. Beneath the forewing is marked the same though paler than above, the hindwing chiefly blackish-brown with obsolete golden yellow spots in the central part and before the margin. Palpi beneath with yellow hairs. Length of forewing 22 mm.“ Central Congo District, in the primeval forest.



**C. boadicea** *Hew.* (76 b) is similar to *C. atratus* (76 a), but at once discernible by the very large and *boadicea*, long yellow spot in 1 b of the forewing. The ♀ is unknown to me. Cameroon to Gabun.

**C. chrysoglossa** *Mab.* (76 b) cannot be mistaken for any other species. Cameroon.

*chrysoglossa*.

**C. illustris** *Mab.* (76 b) numbers among the largest and most beautiful species of the genus and is *illustris*, particularly distinguished by the great width of the yellow median transverse band of the forewing; in the ♀ the band, however, is narrower than in the ♂. Cameroon to Ogowe Valley.

**C. beni** *B.-Bak.* is unknown to me and could not be inserted in the review of the species according *beni*, to the description, because it does not show for certain, whether the species belongs to the division I or II. — „♂. Both wings black, more or less strewn with orange-brown scales. Forewing with a bright yellow, transparent, very irregular median transverse band from the costal margin over the distal half of the cell almost to the anal angle, behind vein 2 deeply indented by the ground-colour; a subapical spot composed of three dots; a small submarginal double dot across vein 5; a wedge-shaped spot more towards the base in 3. Hindwing at the costal margin as far as vein 7 black, otherwise light orange-brown with an orange subapical band, which also enters into the dark costal margin and is continued along the margin as a row of spots; an orange transverse line at the cell-end. Under surface smoky-brown; forewing with all the hyaline spots of the upper surface; hindwing faintly suffused with yellowish-brown, with a yellow spot in the cell which is closed by a yellowish patch. Fringes orange, at the veins interrupted. In some specimens the forewing beneath also shows a postdiscal row of yellow spots almost parallel to the margin.“ — „The ♀ is similar to the ♂, but darker, and on the hindwing with a series of 4 submarginal spots between the veins 4 to 7.“ Expanse 44 (♂) to 54 (♀) mm, Congo District: Makala-Beni.

## 12. Genus: **Ortholexis** *Karsch.*

Antennal club with a long point, semicircularly bent. Last palpal joint small and short. Cell of forewing projecting little beyond the centre of the forewing; vein 2 arises before the centre of the cell, 5 nearer 6 than 4, 11 separate. Hindwing rounded off; vein 2 far behind the centre of the cell; terminal vein of the cell very much curved towards the base; vein 5 feeble and indistinct. Hind tibiae with 4 spurs, in the ♂ very long haired.

**O. melichroptera** *Karsch.* Both wings above and beneath monotonously blackish-brown, without any other markings but a slanting, semi-transparent, yellow transverse band of the forewing, beginning at the costal margin somewhat behind the centre and ending at vein 2; it is situate entirely beyond the discal cell, but it completely or almost completely fills up the base of the areas 5 to 9; its spot in 2 is triangular and with its apex reaches to vein 2; in the ♂ this band is broader in the centre, distally rounded off and in the area 1 b about 3 mm distant from the margin, in the ♀ it is almost equally broad and in 1 b scarcely more than 1 mm distant from the margin. Palpi yellow, beneath with a greyish-brown longitudinal stripe. Expanse 43 (♂) to 53 mm. Cameroon.

**O. hollandi** *H.-Drc.* (= *johnstoni* *Holl.*) is smaller (about 36 mm) and differs from the ♂ of *O. melichroptera* in the light transverse band of the forewing being quite narrow, whitish and much shorter, only reaching vein 4. ♀ unknown to me. Cameroon and Congo District.

## Appendix.

I append here the following genera which I was unable to examine and the position of which amongst the Hesperids is doubtful.

Genus: **Katreus** *Watson.*

(= *Choristoneura* *Mab.*; *Loxolexis* *Karsch.*)

Antennae long, longer than half the costal margin of the forewing; club long and thin. Terminal joint of palpus entirely hidden. Wings broad. Discal cell of forewing very long, as long as two thirds of the costal margin, with an elongately extended apex and a curved terminal vein: vein 2 far before the centre of the cell, 5 straight, but nearer 4 than 6, 11 separate. Hindwing broad rounded off: vein 2 almost from the centre of the cell; 5 very delicate, indistinct, terminal vein almost straight. Hind tibiae with 4 spurs, beneath densely spined; in the ♂ with a long hair-pencil.

**K. johnstoni** *Butl.* (= *apicalis* *Mab.*; *percnoptera* *Karsch.*) (76 b, as *apicalis*) in its size, colouring and marking is very similar to *Ortholexis melichroptera* *Karsch.* and differs beside the generic marks only in the

yellow transverse band of the forewing terminating at vein 3 (only with a small punctiform spot in 2), forming a spot in the discal cell and being divided by black veins. Sierra Leone to Cameroon.

### Genus: **Timoconia** Strd.

„Antennae extending about to the centre of the wings; club terminating in a fine sharp point which, however, is quite straight, whereas the club itself is in or shortly within the centre strongly curved (though not so much as in *Abantis plerotica* Karsch-♀) and thereby forms a hook. Palpi as in *Chapra mathias* F., but the terminal joint straight anteriorly somewhat divergent. Margin of forewing less oblique than in *Chapra*, that of hindwing broadly rounded, without forming any lobular prolongation. Vein 5 of forewing equally distant from 4 and 6, vein 5 of hindwing well developed. Forewing with a strongly developed stigma. Hindwing beneath without any marking. Hind tibiae with two pairs of spurs, of which those outside are only half as long as the two others.“

*thielei*. **T. thielei** Strd. „♂. All the wings are brown, with a faint golden yellowish reflection. Forewing with a jet-black, equably broad (about 1 mm), 5 mm long, straight oblique streak („stigma“) extending from the centre of the posterior margin to vein 4 and being directed towards the apex of the wing, and with whitish markings: in the distal half of the cell, along the posterior edge of it, a streak of  $2\frac{1}{2}$  mm length, which is sharply pointed at its proximal end, whilst at its distal end it is anteriorly broken, so that it is prolonged into a slanting oblique streak of about  $1\frac{1}{2}$  mm length, parallel to the discocellular; near the distal side of the apex of the black stigma, between the veins 3 and 4, a quadrangular transverse spot, and between the veins 6 to 9 three round punctiform spots, the posterior of which is a little larger, their distance from each other being as great as the diameter of the smaller spots; they form a straight row about  $2\frac{1}{2}$  mm distant from the white streak in the cell and pointing vertically to the costal margin. Underside of both wings brownish-grey with similar fringes; forewing with the same light markings as above, which, however, are less distinctly marked, and a slightly darker, indistinct longitudinal streak from the base to beyond the centre; hindwing beneath quite uni-coloured.“ Expanse 29 mm. Delagoa Bay.

*doris*. „*Nisoniades*“ **doris** Wkr. „♀. Brown. Head in front, abdomen beneath, and legs white. Antennae white with a black apex. Abdomen with a white transverse band at the posterior edge of each joint. Wings with white markings. Forewing: two spots in the centre, the first near the base; an irregular distal band of 4 spots and 2 dots; a submarginal band formed of 8 dots; fringes speckled brown and white. Hindwing: a spot near the base, a distal band of three spots and a submarginal band like in the forewing; fringes white. Forewing beneath at the costal margin whitish with almost the same markings as above. Hindwing beneath greenish fawn-coloured, at the hind-margin broadly white and with the same markings as above.“ Expanse about 26 mm (1 in. 1 lin.). Tajora (in French Somali-Land).

## Alphabetical List

of the forms of the Ethiopian Hesperidae with reference to the original descriptions.

\*) signifies that the form is also figured at the place cited.

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|--|---|
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| abjectus Het. <i>Snell.</i> Tijd. voor Ent. 1872, p. 52. *           | aldabrana Eagr. <i>Fryer.</i> Trans. Linn. Soc. Lond. 15, p. 20. *          |
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| abscundita Hesp. <i>Plötz</i> Mitt. Nat. Ver. N.-Vorp. 1884, p. 21.  | alluaudi Ccl. <i>Mab.</i> & <i>Boull.</i> Bull. Soc. Ent. Fr. 1916, p. 244. |
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| adelica Capr. <i>Karsch.</i> Entomolog. Nachricht 18, p. 242.        | amadhu Plat. <i>Mab.</i> C.-R. Soc. Ent. Belg. 35, p. 178.                  |
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| adon Osm. <i>Mab.</i> Bull. Soc. Ent. Fr. 1889, p. 149.              | anneris Ab. <i>Rbl.</i> & <i>Rog.</i> Baumann Mass.-Land, p. 338.           |
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| aegipan Cycl. <i>Trim.</i> Trans. Ent. Soc. Lond. 1868, p. 94. *     | anchises Rhop. <i>Gerst.</i> Glied.-Thier-Fauna Sansibar, p. 374. *         |
| aequalis Parn. <i>Gaede</i> Int. Ent. Zeitschr. 11 (1917), p. 31.    | andouginis Rhop. <i>Plötz</i> Stett. Ent. Ztg. 45, p. 60.                   |
| aeschylus Rhop. <i>Plötz</i> Stett. Ent. Ztg. 45, p. 65.             | anelia Parn. <i>B.-Bak.</i> Ann. Mag. Nat. Hist. 1908 (2), p. 480.          |
| affinissimus Plat. <i>Strd.</i> Arch. Naturg. 86 A 7 (1921), p. 163. | angolana Cycl. <i>Karsch.</i> Entomolog. Nachricht 22, p. 375.              |
| afikpo Gorg. <i>Drc.</i> Proc. Zool. Soc. Lond. 1909, p. 411. *      | annulifer Ox. <i>Holl.</i> Ann. Mag. Nat. Hist. 1892, p. 293.               |
| agylla Hesp. <i>Trim.</i> South. Afr. Butt. 3, p. 286.               | anomaeus Het. <i>Plötz</i> Stett. Ent. Ztg. 40, p. 358.                     |
| alaotrana Art. <i>Oberth.</i> Ét. Lép. Comp. 11, p. 244. *           | apostrophia Trap. <i>Oberth.</i> Ét. Lép. Comp. 11, p. 239. *               |
| alberti Parn. <i>Holl.</i> Proc. Zool. Soc. Lond. 1896, p. 67.       | arbogastes Rhop. <i>Gn.</i> Maill. Réunion. Ann. G. p. 19.                  |
| albigutta Parn. <i>Mab.</i> Grandid. Madagasc. 18, p. 357. *         | aretomarginata Ab. <i>Lathy</i> Trans. Ent. Soc. Lond. 1901, p. 34. *       |
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194		<i>anacreon</i> <i>Trim.</i> Acr. 276	55 a	anthedon <i>Dbl.</i> Hypol. 215	47 c
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albus <i>Aur.</i> Terac. 51	16 a	<i>anaemia</i> <i>Eltr.</i> Acr. 269		antielea <i>Drury</i> Char. 134	33 d
alcesta <i>Cr.</i> Lept. 31	10 a	<i>analava</i> <i>Ward</i> Char. 138	31 c	antifaunus <i>Dbl. &amp; Hew.</i> Hypol.	
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alciope <i>Hew.</i> 248	57 e	<i>anax</i> <i>Sm.</i> Terac. 55	17 c, d	<i>antimachus</i> <i>Papilio</i> 3, 21, 279	
<i>alciope</i> Acr. 240, 247		<i>anachis</i> <i>Gerst.</i> Rhop. 508	75 f	<i>antimachus</i> <i>Stgr.</i> Pseudal. 379	66 g
alcippina <i>Aur.</i> Acr. 258		<i>ancoata</i> <i>Sm.</i> Libyth. 294		antinorii <i>Oberth.</i> Acr. 256	
<i>alcippina</i> Acr. 72		<i>andara</i> <i>Ward</i> Char. 126		antinorii <i>Oberth.</i> Cup. 461	
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<i>alcippus</i> Dan. 258		<i>andravalana</i> <i>Mab.</i> Hen. 100		anvatura <i>Bsd.</i> Byb. 208	
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aliena <i>Btlr.</i> Terias 65		<i>anganavo</i> <i>Ward</i> Hen. 100		apelles <i>Oberth.</i> Spind. 413	69 f
alienus <i>Trim.</i> Iol. 404	69 b	<i>angelita</i> <i>Suff.</i> Deud. 367	65 i	aphnaeoides <i>Trim.</i> Iol. 404	69 b
alinda <i>Mab.</i> Euryt. 210	49 e	<i>angolana</i> <i>Btlr.</i> Cycl. 552		<b>Aphnaeus</b> <i>Hbn.</i> 407	
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alphaea <i>Drury</i> Erg. 208		<i>angulifascia</i> <i>Btlr.</i> Hen. 101		<i>Apisa</i> 5	
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amakosa <i>Trim.</i> Durb. 303	62 a	<i>angustifasciata</i> <i>Grünb.</i> Plan.		<i>arabica</i> <i>Eltr.</i> Acr. 269	
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amanica <i>Strd.</i> Hen. 97		<i>angustus</i> <i>Rollsch.</i> Char. 126	30 a	<i>arabica</i> <i>Rbl.</i> Acr. 285	
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amaniensis <i>Voss.</i> Sal. 218		<i>anitorgis</i> <i>Hew.</i> Cym. 153	36 c	aranda <i>Wallgr.</i> Phas. 427	70 f, g
amarah <i>Guér.</i> Lyc. 445	72 b	<i>anjuana</i> <i>Btlr.</i> Terias 64		arbogastes <i>Guen.</i> Rhop. 508	78 i
<i>amarah</i> Lycaen. 443		<i>ankaratra</i> <i>Ward</i> Hen. 102	28 c	arborifera <i>Btlr.</i> Iol. 404	69 a
amaranta <i>Karsch</i> Diest. 169	38 f	<i>ankoma</i> <i>Mab.</i> Hen. 103	28 d	arcadius <i>F.</i> Euryph. 178	40 b
<i>amaranta</i> Diest. 160, 163, 165		<i>ankova</i> <i>Ward</i> Hen. 101		archesia <i>Cr.</i> Prec. 221	52 a
amasa <i>Hew.</i> Ox. 381	66 h	<i>annae</i> <i>Wallgr.</i> Terac. 56	18 d	<i>archesia</i> Prec. 222	
amatus <i>F.</i> Terac. 50		<i>annulifer</i> <i>Holl.</i> Oxyp. 553	77 d	arcticincta <i>Btlr.</i> Acr. 281	54 c
<b>Amaurina</b> <i>Aur.</i> 77		<i>anomacer</i> <i>Plötz</i> Het. 550	77 k	<i>Arctiidae</i> 5	
<i>Amaurina</i> <i>Aur.</i> 71		<i>anomala</i> <i>Btlr.</i> Pier. 48	15 b	arctomarginata <i>Lathy</i> Ab. 368	
<b>Amauris</b> <i>Hbn.</i> 72		<i>anomalogramma</i> <i>B.-Bak.</i> Cup.		areca <i>Mab.</i> Acr. 279	54 e
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amazoula <i>Bsd.</i> Al. 299	61 c	<i>ansellica</i> <i>Btlr.</i> Eux. 124	29 f	<i>arcnaria</i> <i>E.-Sh.</i> Plan. 244	
amazoula <i>Mab.</i> Cren. 206		<i>ansorgei</i> <i>E.-Sh.</i> <i>Amaurina</i> 77	24 d	arcnicolens <i>Btlr.</i> Terac. 51	
ambigua <i>Trim.</i> Acr. 275		<i>ansorgei</i> <i>E.-Sh.</i> Myc. 90, 96		arescopia <i>B.-Bak.</i> Lyc. 439	71 c
amelia <i>Luc.</i> Terac. 52		<i>ansorgei</i> <i>Marsh.</i> Terac. 51		aretina <i>Hew.</i> Gorg. 557	77 c
ameliae <i>Doum.</i> Char. 133	31 b	<i>ansorgei</i> <i>R. &amp; J.</i> Cren. 206		argentata <i>Bart.</i> Ypth. 116	
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amenaida <i>Hew.</i> Pent. 307	61 f	<i>ansorgei</i> <i>Rollsch.</i> Char. 126		argenteogutta <i>Btlr.</i> Cycl. 552	78 b
amenaidana <i>Strd.</i> Pent. 307		<i>ansorgei</i> <i>Rollsch.</i> Kall. 211		argenteola <i>Holl.</i> Aphn. 409	69 d
amenaidoides <i>Holl.</i> Pent. 307		<i>ansorgei</i> <i>Rollsch.</i> Melan. 83		argenteomaculata <i>Pag.</i> Axioc.	
amenides <i>Hew.</i> Cym. 152	35 d	<i>ansorgei</i> <i>Rollsch.</i> Pap. 17		420	
amestris <i>Drury</i> Prec. 224		<i>ansorgei</i> <i>Rollsch.</i> Sal. 217		<i>argenticostriatus</i> <i>Plötz</i> Cycl. 552	
<i>amicea</i> Diestog. 167		<i>ansorgei</i> <i>Sm.</i> Acr. 250		argia <i>F.</i> Eron. 62	21 c, d
amicia <i>Hew.</i> Diest. 167	37 d	<i>ansorgei</i> <i>Sm.</i> Irid. 345		<i>argiades</i> <i>Pall.</i> Ev. 496	
amicitiae <i>Heron</i> Acr. 259	59 f	<i>antahala</i> <i>Ward</i> Hen. 103	28 d	argillaceus <i>Btlr.</i> Terac. 51	16 c
amine <i>Btlr.</i> Zer. 418	69 h	<i>antalus</i> <i>Hpffr.</i> Deud. 375	66 e	<i>Argiolanus</i> 390, 400, 407	
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amneris <i>Rbl. &amp; Rog.</i> Ab. 570	75 b	<i>antamboulou</i> <i>Luc.</i> Char. 138	32 a	<b>Argynniidae</b> 229	
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argyrina Mab. Ypth. 113		aurifrons Strd. Acl. 555		batesi Fldr. Ypth. 114	
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argyrodes Holl. Parn. 539 . . .	78 h	aurigineus Bllr. Terac. 51 . . .	15 e	baumanni Rbl. & Rog. Arg. 232	
argyrosticta Plötz Cer. 526, 527		aurimarginata Suff. Euryph. 158		baumanni Rog. Char. 134 . . .	33 c
ariadne Bllr. Cup. 486 . . .	74 a	aurimargo Holl. Sar. 579		baumi Weym. Axioc. 421	
Arichalea 5		aurincta Bllr. Parn. 535 . . .	78 f	bauri Plötz Parn. 539 . . .	79 a
arida Aur. Prec. 220		aurivillii Bart. Diest. 165 . . .	38 b, c	baxteri E.-Sh. Acr. 283 . . .	54 a
aridatha Hew. Diest. 162 . . .	39 c	aurivillii Bllr. Myc. 96		bebra Rothsch. Char. 139	
ariel Mab. Pard. 530		aurivillii Reuss Pard. 530		beckeri H.-Schäff. Cym. 145 . . .	34 c
aristophontes Oberth. Pap. 19		aurivillii Rüb. Iol. 398		beethoveni Suff. Myl. 33	
arne Klug Terac. 51		aurivillii Schtz. Zer. 418 . . .	70 a	Belenois Hbn. 39	
Aroa 5		aurivillii Stgr. Acr. 248 . . .	57 e	bella Aur. Ox. 381	
arthon Drc. Pseudal. 379		aurivillii Stgr. Cym. 150		bella B.-Bak. Asl. 343	
Arrugia Wallgr. 433		aurivillii Suff. Terac. 54		bella Weym. Acr. 275	
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artaynta Mschlr. Euph. 188		aurivilliusi Seeldr. Pap. 23		belli Hew. Iol. 402 . . . . .	68 g
artemenes Mab. Cup. 462 . . .	72 k	auroguttata Chalcidica 6		belli Iol. 406	
artemisa Stoll Acr. 268		aurora Suff. Eron. 62 . . .	15 e	bellina Plötz Iol. 398 . . .	68 d
Artitropa Holl. 518		aurorina Bllr. Prec. 223		bellona Weym. Acr. 275 . . .	59 f
artopta Drc. Caen. 517		australis Aur. Diest. 170		bemba Neave Deud. 372 . . .	66 b, c
aruma Hew. Deud. 367 . . .	65 i	austrinus Rothsch. Char. 139		benacus Mab. Hen. 102	
aruma Deud. 375		auxo Luc. Terac. 60 . . . . .	20 c	benga Holl. Caen. 516 . . .	80 c
asboloplintha Karsch Acr. 283	54 a	avelona Ward Hen. 103 . . .	28 e	benguelae Chapm. Cren. 204	49 b
ascrepticia Slvd. Acr. 258		avriko Karsch Spind. 413 . . .	69 f	benguelae Crenis 158	
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aslauga Trim. Teriom. 328 . . .	62 e	Axiocerses 417		bernieri Bsd. Amp. 549 . . .	78 c
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asteris Trim. Cup. 479				bethoni Bllr. Hesp. 564	
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asterope Klug Ypth. 115 . . .	29 c			biafra Ward. Nept. 201	
astoria Holl. Eagr. 572				bibulus F. Lachn. 363 . . . . .	65 g
astrape Holl. Pard. 531 . . . . .	79 e			bibundanus Grünb. Cup. 493	
astrigera Bllr. Acr. 281 . . . . .	60 f			bicaudatus Aur. Iol. 406 . . .	69 c
astrigera Bllr. Sar. 575 . . . . .	76 h			bichroma Strd. Eres. 340 . . .	64 b
Atella Dbl. 230				bicolor Aur. Pseudacr. 195	
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atergatis Ww. Acr. 268 . . . . .	55 f			bicolor Eres. 338	
Aterica Bsd. 191				bicolor Sm. & Ky. Pseudcr. 325 . . . . .	62 f
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atolmis Ww. Acr. 274				biguttatus Mab. Acl. 555	
atolmis Acr. 277				bihé B.-Bak. Lyc. 443 . . . . .	71 g
atossa Hew. Diest. 169 . . . . .	37 a, b			bilineata B.-Bak. Iol. 402	
atratus Mab. Cel. 582 . . . . .	76 a			bimacula Plötz Tel. 301 . . . . .	61 c, d
atrigenmatus Bllr. Cup. 495				bimaculata Hew. Deud. 368	66 a
atrio Mab. Sem. 518				bimaculata Hew. Deud. 367	
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atrovirens Mab. Diest. 162 . . .	39 a, b			binaevata Mab. Caen. 516 . . .	80 b
atrovirens Diest. 163, 164				binucleolata Strd. Ypth. 115 . . .	29 d
aubyni Ellr. Acr. 257 . . . . .	60 a			biocellata Strd. Ypth. 115 . . .	29 d
aucta Karsch Deud. 371				biocelligera Strd. Ypth. 115 . . .	29 d
auga Karsch Pent. 309 . . . . .	61 h			bipunctatus Rothsch. Char. 132	
augusta Suff. Lipt. 334				bipupillata Slvd. Prec. 226	
augustina Bsd. Sal. 217				biraca Suff. Acr. 263	
augustina Salamis 78				biseriatus Bllr. Cel. 581 . . . . .	76 a
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aurantiaca Aur. Coen. 108				biseriatus Mab. Oxyp. 546	
aurantiaca Aur. Euryph. 157				bisinuata Bllr. Terias 64 . . . . .	22 d
aurantiaca Bllr. Al. 299				bismarcki Karsch Ab. 368 . . .	75 a
aurantiaca Heron Erg. 208				bistrigata Aur. Axioc. 421	
aurata Carp. Euph. 186 . . . . .	44 a			bitje Drc. Lyc. 455 . . . . .	72 f
aurea B.-Bak. Lyc. 456 . . . . .	72 h			bitje Drc. Pent. 310 . . . . .	63 c
aurea Drc. Cer. 528 . . . . .	79 f, g			bitje Drc. Spind. 416	
aurea Cerat. 527					
aureofasciata Lathy Euph. 185					
aureola Ellr. Acr. 273 . . . . .	60 c				
aureola Ky. Euph. 187 . . . . .	43 c, d				
aureolineata B.-Bak. Hypol. 385					
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bixac <i>L.</i> Rhop. 508 . . .	75 e	buschbecki <i>Dew.</i> Acr. 256 . .	57 a	caprina <i>Aur.</i> Cym. 150	
blanca <i>Suff.</i> Terac. 56		busoga <i>B.-Bak.</i> Lachn. 364		Caprona <i>Wallgr.</i> 570	
blanda <i>Rothsch.</i> Char. 131		butha <i>Strd.</i> Cup. 480		capronnieri <i>Plötz</i> Zoph. 512	80 c
blassi <i>Weym.</i> Cym. 144		butleri <i>Aur.</i> Acr. 250		Capys <i>Hew.</i> 423	
boadicea <i>Hew.</i> Cel. 583 . . .	76 b	butteri <i>Aur.</i> Acr. 247		carana <i>Hew.</i> Cup. 467 . . .	73 c
bocagei <i>E.-Sh.</i> Rhop. 509		butleri <i>Aur.</i> Diest. 160		carbo <i>Mab.</i> Sem. 518	
boeticus <i>L.</i> Cup. 471		butleri <i>Grünb.</i> Cym. 147		Carcharodus <i>Hbn.</i> 566	
boguensis <i>Fldr.</i> Pier. 41		butleri <i>Rothsch.</i> Char. 131 . .	31 a	carcina <i>Hew.</i> Epit. 353 . . .	65 d
bohmanni <i>Fldr.</i> Char. 131	33 a	büttneri <i>Rog.</i> Acr. 277 . . .	54 f	carcina <i>Epit.</i> 350	
bohmanni <i>Char.</i> 137		buxtoni <i>Btlr.</i> Acr. 265 . . .	56 a	cardui <i>L.</i> Pyr. 227	
boisduvali <i>Dbl.</i> Pseudacr. 194		buxtoni <i>Acr.</i> 264		cardui <i>Pyramcis</i> 2, 121	
boisduvali <i>Hew.</i> Hewit. 360 . .	64 f	buxtoni <i>Btlr.</i> Terac. 54		cariate <i>Hew.</i> Amp. 519 . . .	78 b
boisduvali <i>Wallgr.</i> Cren. 205 . .	48 g	buxtoni <i>Hew.</i> Hypol. 385 . . .	67 b	cariate <i>Amp.</i> 531	
bolina <i>L.</i> Hypol. 213		Byblia <i>Hbn.</i> 207		carina <i>Hew.</i> Iol. 401 . . .	68 f
bolina <i>Hypominas</i> 121		Byblia 121		carlota <i>Suff.</i> Pseuder. 325 . .	63 c
bolissus <i>Hew.</i> Iol. 403 . . .	69 a, b			carlota <i>Pseuder.</i> 321	
bolivari <i>Kheil</i> Lipt. 334				carmentis <i>Dbl. &amp; Hew.</i> Acr.	
Bolocera 6				249 . . . . .	57 c
Boloria 231				carmines <i>Hew.</i> Mal. 559 . . .	77 a
bomba <i>Sm.</i> Acr. 276				caruifer <i>Btlr.</i> Terac. 50	
bombeana <i>Strd.</i> Euph. 185				caruta <i>Hew.</i> Tel. 302 . . .	61 c
bonasia <i>F.</i> Acr. 263 . . .	56 b			carshena <i>Hew.</i> Euryph. 171 . .	41 d, f
bonasia <i>Acr.</i> 312				carsoni <i>Btlr.</i> Cup. 482 . . .	74 e
bonnyi <i>Sm.</i> Cym. 147				carsoni <i>Btlr.</i> Cycl. 552	
boopis <i>Trim.</i> Prec. 226				carteri <i>Btlr.</i> 136	
boosi <i>Suff.</i> Pap. 13				Caryatis 5	
borbonica <i>Bsd.</i> Parn. 535 . . .	78 e, f			casphor <i>Suff.</i> Pap. 18	
borbonica <i>Karsch</i> Parn. 537				caspi <i>Suff.</i> Myl. 33	
borbonica <i>Oberlh.</i> Ant. 228				cassina <i>Btlr.</i> Lept. 107 . . .	28 f
boschi <i>Strd.</i> Leptom. 422 . . .	70 b			cassius <i>Godt.</i> Pseud. 109 . . .	28 g
boscae <i>Saalm.</i> Acr. 257 . . .	56 g			cassualalla <i>B.-Bak.</i> Capr. 570	
boseae <i>Saalm.</i> Art. 519 . . .	79 i			cassus <i>L.</i> Lept. 107	
boueti <i>Feisth.</i> Char. 130				casta <i>Gerst.</i> Terac. 59 . . .	19 g
bonvieri <i>Mab.</i> Sar. 577 . . .	76 c			castalis <i>Stgr.</i> Terac. 51 . . .	16 c
bowkeri <i>Trim.</i> Cup. 465 . . .	73 b			Castalius 457, 463, 466, 468	
bowkeri <i>Trim.</i> Lept. 107				castanea <i>Eltr.</i> Acr. 249 . . .	59 a
bowkeri <i>Trim.</i> Steeg. 388 . . .	67 c			castor <i>Cr.</i> Char. 127 . . .	30 a
bowkeri <i>Trim.</i> Terac. 60 . . .	15 f			Catacroptera <i>Karsch</i> 218	
boydi <i>Dixey</i> Byb. 208				Catacroptera 121	
brachycera <i>Trim.</i> Arr. 434	71 a, b			catalina <i>Sm. &amp; Ky.</i> Lipt. 337	63 k
braesia <i>Godm.</i> Acr. 271				catalla <i>Karsch</i> Deud. 371	65 k
brahami <i>Lathy</i> Aphn. 409 . . .	69 c			catharina <i>Btlr.</i> Pseuder. 321	62 f
brahmsi <i>Suff.</i> Acr. 264				Catocala 6	
brasidas <i>Fldr.</i> Pap. 22 . . .	7 d			catocalina <i>Mab.</i> Mal. 559 . . .	77 a
brassicoides <i>Guér.</i> Pier. 49 . .	12 f			catochrous <i>Slgr.</i> Chr. 136	
braytoni <i>E.-Sh.</i> Euryph. 174				Catochrysops 472, 488, 490	
brenda <i>Dbl. &amp; Hew.</i> Terias 64	22 c			catochrysops <i>Btlr.</i> Terac. 52	16 c, d
brenda <i>Dre.</i> Lar. 329				Catopsilia <i>Hbn.</i> 63	
Brenthis 231				catori <i>B.-Bak.</i> Acr. 257	
Brephidium <i>Scdd.</i> 458, 473				catori <i>B.-Bak.</i> Deud. 372	
brevicornis <i>Plötz</i> Geg. 540				catori <i>B.-Bak.</i> Epitola 349	
brigida <i>Plötz</i> Sar. 579 . . .	76 h, i			catori <i>B.-Bak.</i> Epitolina 348	
brigidella <i>Plötz</i> Sar. 579 . . .	76 f, g			catori <i>B.-Bak.</i> Iol. 394	
brigitta <i>Cr.</i> Terias 65 . . .	22 f			catori <i>B.-Bak.</i> Pent. 308	
brimo <i>Karsch.</i> Lachn. 364 . . .	65 g			catori <i>B.-Bak.</i> Pseuder. 321	
bromius <i>Dbl.</i> Pap. 19 . . .	5 b, c			catuna <i>Epit.</i> 358	
brontes <i>Godm.</i> Pap. 19 . . .	5 a			Catuna <i>Ky.</i> 192	
brunhilda <i>Ky.</i> Euryph. 173				Caluna 121, 142, 143, 159, 166,	
brunnea <i>B.-Bak.</i> Cer. 526				170	
brunnea <i>Eltr.</i> Acr. 281 . . .	60 f			cebrene <i>Trim.</i> Prec. 226 . . .	51 a
brunnea <i>Ky.</i> Micr. 310 . . .	64 b			cebron <i>Ward</i> Pier. 44 . . .	14 b, c
brunnea <i>Sm. &amp; Ky.</i> Lyc. 439	71 d, e			cedreatis <i>Hew.</i> Char. 137 . . .	33 c
brunneostriga <i>Plötz</i> Ked. 543	78 b			Celaenorrhinus <i>Hbn.</i> 580	
brunnescens <i>Rothsch.</i> Char.				Celaenorrhinus 5	
127				celerio <i>Celerio</i> 2	
brunneus <i>Aur.</i> Capys 424				celimene <i>Luc.</i> Terac. 52 . . .	16 e, f
brunneus <i>B.-Bak.</i> Cup. 484				cellularis <i>Ky.</i> Pseuder. 325	62 g
brussauxi <i>Mab.</i> Rhop. 508				cenea <i>Stoll</i> Pap. 13	
brutus <i>Cr.</i> Char. 126 . . .	30 a			centralis <i>Aur.</i> Hen. 98	
bubovi <i>Karsch</i> Gastr. 558				cephena <i>Hew.</i> Epit. 358 . . .	65 e
buchholzi <i>Plötz</i> Gam. 513 . . .	80 g			cephesus <i>Ehrm.</i> Pseud. 30	
buchholzi <i>Plötz</i> Lyc. 452				cephesus <i>L.</i> Acr. 278 . . .	54 f
bueronius <i>Karsch</i> Cup. 494	74 h			cephonius <i>Hpffr.</i> Pap. 13	
bukoba <i>Eltr.</i> Acr. 250				cephren <i>Dre.</i> Asl. 343	
bukoba <i>Weym.</i> Acr. 265				cerannia <i>Hew.</i> Epit. 352 . . .	64 e
bulbifera <i>Sm.</i> Amaur. 74	25 a			cerasa <i>Hew.</i> Acr. 287 . . .	53 b
bule <i>Holl.</i> Pard. 530 . . .	79 d, e			Ceratrichia <i>Btlr.</i> 525	
bumilleri <i>Lanz</i> Amaur. 75 . .	24 b			cerberus <i>Aur.</i> Hypol. 215	
Bunaea 6				cercene <i>Hew.</i> Epit. 355 . . .	65 f
buqueti <i>Bsd.</i> Eron. 63 . . .	21 e			cercenoides <i>Holl.</i> Epit. 355	
bura <i>Wkr.</i> Cup. 497				ceres <i>Btlr.</i> Terias 64 . . .	22 d
burni <i>Btlr.</i> Acr. 286				ceres <i>F.</i> Euph. 187 . . .	43 a



	Plat.		Plat.		Plat.
<i>ceres</i> Hew. Hypol. 386 . . .	67 b	<i>citreus</i> Bllr. Terac. 60 . . .	20 d, e	<i>conradsi</i> Aur. Phas. 428 . . .	70 d, e
<i>ceres</i> Mab. Hypol. 387 . . .		<i>citrina</i> Aur. Myl. 34 . . .	12 d	<i>conradsi</i> Strd. Ypth. 116 . . .	29 c
<i>cerita</i> E.-Sh. Acr. 287 . . .	60 e	<b>Citrinophila</b> Ky. 325		<i>conradti</i> Oberth. Acr. 257 . . .	56 f
<i>ccruana</i> R. & J. Prec. 224		<i>clara</i> Suff. Terac. 56		<i>conradti</i> Oberth. Pseudacr. 195	
<i>Cerura</i> 6		<i>clarei</i> Neave Nept. 201		<i>consanguinea</i> Aur. Plan. 195	
<i>cerymica</i> Hew. Zoph. 512 . . .	80 f	<i>clarei</i> Neave Acr. 268		<i>consanguinea</i> Aur. Plan. 244 . . .	58 b
<i>cerync</i> Bsd. Prec. 224 . . .	51 d	<i>clarensis</i> Neave Pent. 307		<i>consanguinea</i> Aur. Pseudacr.	
<i>Cethosia</i> 4		<i>clarissa</i> Bllr. Myl. 32		195	
<i>ceucacnira</i> Drc. Caen. 517		<i>clarki</i> Bllr. Pseudacr. 197 . . .	46 b	<i>consanguis</i> Aur. Cym. 151 . . .	35 a
<i>chaca</i> Trim. Ked. 543 . . .	78 c	<i>clarki</i> Pseudacraea 138		<i>consanguis</i> Cym. 152	
<i>chacoides</i> Gaede Ked. 543		<i>clarus</i> Aur. Euph. 189		<i>consors</i> R. & J. Cren. 206	
<i>chaeribula</i> Oberth. Acr. 275 . . .	55 b	<i>claudianus</i> Drc. Euryph. 158		<i>conspicua</i> Neave Nept. 201	
<i>chaeribulula</i> Strd. Acr. 275		<i>claudianus</i> Euryph. 157		<i>constantinus</i> Ward Pap. 17 . . .	4 c
<i>Chalcidica</i> 6		<i>clelia</i> Cr. Prec. 226 . . . . .	51 a	<i>continentalis</i> Heyn Pier. 47 . . .	12 e
<i>chalcis</i> Fldr. Euryph. 157 . . .	36 d	<i>cleocharis</i> Hew. Apat. 212 . . .	50 c	<i>continentalis</i> Strd. Parn. 535	
<i>Chaleosia</i> 5		<i>cleodora</i> Hbn. Eron. 61 . . .	21 b	<i>continua</i> Aur. Myl. 33	
<i>Chalcosiinae</i> 5		<i>cleoanthe</i> Cr. Catacr. 218 . . .	52 c	<i>continuata</i> Holl. Nept. 201	
<i>chalybe</i> Dbl. & Hew. Rhop.		<i>cloctensi</i> Aur. Pent. 309		<i>contracta</i> Bllr. App. 38	
508 . . . . .	75 e	<i>cloetensi</i> Seeldr. Cym. 146 . . .	35 a	<i>contractus</i> Bllr. Cup. 491	
<i>chamacleon</i> Mab. Plat. 524 . . .	79 b	<i>cloetensi</i> Cymoth. 142		<i>contraria</i> Grünb. Acr. 279	
<i>chambezi</i> Neave Acr. 274		<i>clymenus</i> Drc. Pseudal. 379 . . .	66 h	<i>contraria</i> Strd. Acr. 265	
<i>chambezi</i> Neave Parn. 538		<i>clytus</i> L. Lept. 107 . . . . .	28 f	<i>contraria</i> Weym. Char. 136	
<i>chanleri</i> Holl. Char. 135		<i>coander</i> Mab. Andr. 522		<i>cooksoni</i> Drc. Cycl. 552 . . . . .	78 a
<i>chapkowskii</i> Suff. Pap. 19 . . .	5 c	<i>coanza</i> Plötz Padr. 531		<i>cooksoni</i> Drc. Eriks. 432 . . . . .	71 a
<i>chapmani</i> Hew. Hypol. 214		<i>cobaltina</i> Aur. Hypol. 387 . . .	67 c	<i>cooksoni</i> Drc. Euph. 189	
<i>chapunga</i> Hew. Prec. 221		<i>cocalia</i> F. Euryph. 177 . . . . .	40 c	<i>cooksoni</i> Drc. Myc. 92	
<b>Charaxes</b> O. 124		<i>coccinata</i> Hew. Cym. 153 . . .	36 b, c, d	<i>cooksoni</i> Drc. Neoc. 112	
<i>Charaxes</i> 3, 4, 121, 122		<i>coeculus</i> Hpffr. Hypol. 386 . . .	67 b	<i>cooksoni</i> Neoc. 111	
<b>Charaxidinae</b> 122		<i>coeculus</i> Mab. Hypol. 387		<b>Cooksonia</b> Ham. Drc. 302	
<i>charcedonius</i> Karsch Pap. 21 . . .	9 c	<i>coelestina</i> Dew. Prec. 222 . . .	51 e	<i>Cooksonia</i> 298	
<i>charina</i> Bsd. Pier. 46 . . . . .	14 e, f	<i>coelestis</i> = <i>coelestina</i> , Prec.		<i>coprates</i> Drc. Euph. 190 . . . . .	42 a, b
<i>charila</i> Plötz Cer. 526		222		<i>coranus</i> Sm. Cym. 151 . . . . .	35 c
<i>charmian</i> Sm. & Ky. Mim. 314 . . .	62 b	<i>coenobita</i> F. Pseudonept. 193 . . .	46 d	<i>corax</i> Cr. Myr. 378	
<i>charopus</i> Ww. Pap. 18 . . . . .	6 a	<b>Coenyla</b> Hew. 108		<i>cordatus</i> E.-Sh. Cup. 461 . . . . .	72 i
<i>cheles</i> Hew. Cycl. 552.		<i>Coenyla</i> 107		<i>cordelia</i> Ky. Epit. 348	
<i>chelys</i> F. Gnoph. 83 . . . . .	26 c	<i>coerulea</i> Aur. Lyc. 450 . . . . .	71 i	<i>cordula</i> Hew. Caen. 516 . . . . .	80 c
<i>chersia</i> Hew. Ked. 541		<i>cognata</i> Grünb. Euryph. 179		<i>cornucopiae</i> Holl. Pseudcr. 323	
<i>chibonotatus</i> Aur. Cup. 460		<i>cojo</i> Karsch Parn. 539		<i>coroller</i> Bsd. Amp. 548	
<i>Chilades</i> 488, 495.		<i>Colacenis</i> 4		<i>corruscans</i> Aur. Deud. 371 . . . . .	66 b
<i>chilo</i> Godm. Acr. 282 . . . . .	51 c, 55 a	<i>colastus</i> Plötz Padr. 531		<i>corsandra</i> Drc. Cym. 152	
<i>chilo</i> Acr. 277		<b>Coliadinae</b> 63		<i>corvina</i> Mab. Sem. 518	
<i>chilonis</i> Hew. Euryph. 180		<b>Colias</b> F. 65		<i>coryndoni</i> Rothsch. Char. 137	
<b>Chioneigia</b> Heron 512		<i>Colias</i> 63		<i>corynetes</i> Sm. & Ky. Eres. 341 . . .	64 b
<i>chirala</i> Trim. Trap. 560		<i>colluens</i> Stoll Cel. 582		<i>corynetes</i> Sm. & Ky. Eres. 341 . . .	64 b
<i>chirinda</i> B.-Bak. Lyc. 410 . . . . .	71 d	<i>colmanti</i> Aur. Cym. 147		<i>Cossidae</i> 6	
<i>chloauges</i> B.-Bak. Cup. 481		<i>colonna</i> Ward Pap. 26 . . . . .	8 c	<i>costalis</i> Aur. Plat. 523	
<i>chloeropsis</i> B.-Bak. Euryph.		<i>colotes</i> Drc. Hesp. 566 . . . . .	75 d	<i>costatus</i> Aur. Osm. 545	
178		<i>columbina</i> Cr. Atell. 230 . . . . .	52 f	<i>costleyi</i> Drc. Mim. 316	
<i>chloris</i> F. Myl. 32 . . . . .	10 d	<i>colvillei</i> Bllr. Pseudacr. 194		<i>cottoni</i> B.-Bak. Euryph. 174	
<i>Chloropoea</i> Aur. 193		<i>comma</i> L. Pamph. 509		<i>cottoni</i> B.-Bak. Iol. 401 . . . . .	68 g
<b>Chloroselas</b> Bllr. 416		<i>commixta</i> Aur. Pap. 12		<i>cottoni</i> B.-Bak. Osm. 545	
<b>Chondrolepsis</b> Mab. 512		<i>comorana</i> Aur. Amaur. 75		<i>cottoni</i> B.-Bak. Pow. 360 . . . . .	64 g
<i>chorimene</i> Guér. Prec. 220 . . . . .	52 b	<i>comorana</i> Oberth. Amaur. 77		<i>cottoni</i> E.-Sh. Euph. 188	
<i>Choristoneura</i> Mab. 583		<i>comorana</i> Oberth. Pseudacr.		<i>cowani</i> Bllr. Char. 138	
<i>chriemhilda</i> Stgr. Euryph. 173 . . .	44 d	198		<i>cowani</i> Bllr. Hen. 101 . . . . .	28 b
<i>christina</i> Suff. Pent. 308 . . . . .	61 h	<i>comoranus</i> Aur. Char. 139		<i>crameri</i> Aur. Byb. 208 . . . . .	49 c
<i>christyi</i> E.-Sh. Euph. 191		<i>comoranus</i> Rothsch. Char. 127		<i>crawshayi</i> Bllr. Amaur. 77 . . . . .	24 d
<i>chromiferus</i> Rothsch. Terac. 55 . . .	18 b, c	<i>comorarum</i> Oberth. Art. 519		<i>crawshayi</i> Bllr. Cup. 461 . . . . .	72 k
<i>chrysantas</i> Trim. Phas. 431		<i>comorarum</i> Oberth. Nept. 199 . . .	48 c	<i>crawshayi</i> Bllr. Cup. 473	
<i>chrysaor</i> Trim. Phas. 431 . . . . .	70 i	<i>comus</i> Cr. Art. 519 . . . . .	80 f	<i>crawshayi</i> Bllr. Iol. 396 . . . . .	68 b
<i>chrysauge</i> Mab. Osm. 515 . . . . .	77 g	<i>comus</i> Ward Euryph. 176 . . . . .	40 c	<i>crawshayi</i> Bllr. Lyc. 450 . . . . .	71 h
<i>chryseosticta</i> B.-Bak. Lyc. 455		<i>concepcion</i> Suff. Epit. 356 . . . . .	65 a	<i>crawshayi</i> Bllr. Myl. 36 . . . . .	11 d
<i>chrysipellus</i> Strd. Dan. 72		<i>concolor</i> Aur. Myc. 90		<i>crawshayi</i> Bllr. Pier. 41 . . . . .	13 c
<i>chrysippus</i> L. Dan. 71		<i>concolor</i> Aur. Pieris 44		<i>crawshayinus</i> Aur. Cup. 473	
<i>chrysippus</i> Dan. 2, 197, 213, 258		<i>concordia</i> Hpffr. Crenid. 159 . . .	46 f	<b>Crenidomimas</b> Karsch 158	
<i>chrysoglossa</i> Mab. Cel. 583 . . . . .	76 b	<i>confluens</i> Grünb. Lipt. 331		<i>Crenidomimas</i> 121, 143	
<i>chrysomelis</i> Bllr. Terac. 53		<i>confluens</i> Suff. Acr. 262		<b>Crenis</b> Bsd. 204	
<i>chrysonome</i> Klug Terac. 51		<i>conformis</i> Aur. Cym. 151		<i>Crenis</i> 121, 158	
<i>Chrysophanus</i> 4, 497		<i>confusa</i> Aur. Cym. 146 . . . . .	31 a, b, 36 a	<i>creona</i> Cr. Pier. 40 . . . . .	13 b
<i>ciceronis</i> Ward Cym. 153 . . . . .	35 c	<i>confusa</i> Aur. Lipt. 332		<i>creta</i> Hew. Iol. 401 . . . . .	68 f
<i>Cigaritis</i> 4		<i>confusa</i> Mab. App. 38		<i>cretacea</i> Eltr. Acr. 248	
<i>ciliaris</i> Aur. Cup. 463		<i>confusa</i> Rog. Acr. 250		<i>cretacea</i> Snell. Caen. 516 . . . . .	77 c
<i>cinaethon</i> Hew. Euryph. 176 . . . . .	40 c	<i>congoana</i> Aur. Al. 299		<i>cretosus</i> Bllr. Cup. 467	
<i>cinctea</i> Neave Acr. 256		<i>congoanus</i> Rothsch. Pap. 17		<i>crithea</i> Drury Catun. 192	
<i>cincteus</i> B.-Bak. Cep. 480		<i>congoensis</i> Suff. Cym. 147		<i>crocea</i> Bllr. Myl. 34 . . . . .	22 a
<i>cingulina</i> Mab. Hen. 103		<i>congolensis</i> Capr. Euryph. 173		<i>croceus</i> Geoffr. Colias 65	
<i>cingulum</i> Drc. Micr. 340		<i>conjuncta</i> Blach. Acr. 285		<i>crockeri</i> Bllr. Euph. 185	
<i>cinyras</i> Trim. Libyth. 294 . . . . .	61 a	<i>conjuncta</i> Sm. Acr. 249		<i>croesus</i> Chrysidia 6	
<i>circeis</i> Drury Acr. 253		<i>conjuncta</i> Sm. Epit. 358		<i>crossei</i> E.-Sh. Euph. 185	
<i>cissalma</i> Suff. Hypol. 214		<i>conjungens</i> Aur. Diest. 163 . . . . .	38 f	<i>crossleyi</i> Ward Eux. 124	
<i>cissus</i> Godt. Cup. 489 . . . . .	74 g	<i>conjungens</i> Strd. Cup. 490		<i>crowleyi</i> E.-Sh. Epit. 352 . . . . .	64 e
<i>cithaeron</i> Fldr. Char. 132 . . . . .	31 b	<i>connexa</i> Thur. Acr. 265		<i>crowleyi</i> E.-Sh. Terac. 50 . . . . .	16 a
<i>cithaeron</i> Char. 131		<i>connexivus</i> Bllr. Capys 424 . . . . .	70 g	<i>crowleyi</i> Ky. Eupt. 155	



	Plat.		Plat.		Plat.
<b>Crndaria</b> Wallgr. 431		daria <i>R. &amp; J.</i> Char. 136		<i>Dieslogyna</i> 4, 121, 143, 158, 170, 171, 191	
crustaria <i>Holl.</i> Spind. 414 . . .	69 h	dariaves <i>Hew.</i> Deud. 374 . . .	66 c	<i>difficilis</i> <i>E.-Sh.</i> Terac. 51	
crystallina <i>Sm.</i> Acr. 282 . . .	51 a	darius <i>R. &amp; J.</i> Amaur. 75		<i>difficilis</i> <i>Mab.</i> Hen. 101	
cuama <i>Hew.</i> Prec. 224		darwinia <i>Bltr.</i> Mim. 315		diffusa <i>Bltr.</i> Hypol. 216	
<i>Culapa</i> <i>Mr.</i> 84, 97		<i>Dasychira</i> 5		dilatata <i>Bltr.</i> Eron. 62 . . .	21 e, f
<i>cuparia</i> <i>Cr.</i> Ater. 191		deannulata <i>Strd.</i> Myc. 91		<i>dilula</i> <i>Robbe</i> Pard. 530	
<i>Cupidesthes</i> <i>Aur.</i> 435, 436		debilis <i>Plötz</i> Prosop. 554 . . .	77 i	diluta <i>R. &amp; J.</i> Ant. 228	
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<i>Cupido</i> 434		deborula <i>Aur.</i> Pseuder. 321 . . .	62 f	dimidia <i>Holl.</i> Acall. 511 . . .	79 i
<i>Cupidopsis</i> <i>Karsch</i> 459, 488		decastigma <i>Mab.</i> Eagr. 572 . . .	76 d	dimidiata <i>Aur.</i> Myl. 33 . . .	12 b
<i>cuprescens</i> <i>E.-Sh.</i> Cup. 481		deceptor <i>Trim.</i> Hypol. 214 . . .	47 c	dimorpha <i>Bart.</i> Ater. 191	
<i>cupreus</i> <i>Neave</i> Cup. 475 . . .	74 c	deceptor Hypol. 75		dinarcha <i>Hew.</i> Hypol. 214 . . .	47 c
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cuva <i>Sm.</i> Acr. 288		decipiens <i>Ky.</i> Lipt. 334 . . .	63 h	dinomenes <i>Sm.</i> Deud. 375	
cyara <i>Hew.</i> Cup. 460 . . .	72 h	decira <i>Plötz</i> Hen. 99		dinora <i>Ky.</i> Pseuder. 324 . . .	62 g
<i>cyara</i> Cup. 459		decius <i>Cr.</i> Palla 141 . . .	32 d	diocles <i>Hew.</i> Deud. 373 . . .	66 c
cybeutes <i>Holl.</i> Gastr. 558 . . .	77 d	decolor <i>Mab.</i> Eagr. 573		diogenes <i>Suff.</i> Acr. 273 . . .	55 f
cyclades <i>Ward</i> Cym. 147 . . .	34 b	decora <i>Thur.</i> Myl. 36 . . .	12 b	diomus <i>Hpffr.</i> Hesp. 565 . . .	75 c
cycladina <i>Grünb.</i> Cym. 147		decora <i>Weym.</i> Acr. 274		dionysoides <i>Aur.</i> Pap. 14	
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cyclopis <i>R. &amp; J.</i> Pap. 19		defecta <i>Aur.</i> Ab. 570 . . .	75 b	diphyia <i>Karsch</i> Cym. 149 . . .	35 a
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cygnophila <i>Suff.</i> Eron. 62 . . .	15 c	deidamioides <i>Aur.</i> Terac. 59 . . .	45 f	discopunctatus <i>Suff.</i> Pap. 13	
cylinda <i>Hew.</i> Caen. 516 . . .	80 d	delagoae <i>Trim.</i> Hesp. 566		disjuncta <i>Sm.</i> Acr. 249 . . .	60 c
cymodoce <i>Cr.</i> Kall. 211 . . .	49 f	delalandei <i>Godl.</i> Pap. 17 . . .	6 b	disjunctus <i>Trim.</i> Cap. 423	
<b>Cymothoë</b> <i>Hbn.</i> 143		delalandei Pap. 18		dispar <i>Ky.</i> Epit. 348 . . .	64 d
<i>Cymothoë</i> 3, 4, 121, 142, 156		delatorum <i>Heron</i> Cup. 462		dispar <i>Mab.</i> Amp. 548	
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cyntia <i>Bltr.</i> Char. 130 . . .	34 a	delicatus <i>B.-Bak.</i> Cup. 475 . . .	74 b	dissociatus <i>Bltr.</i> Terac. 60 . . .	20 d, c
cyntius <i>Drury</i> Acr. 264		delius <i>Drury</i> Ant. 229 . . .	52 c	distincta <i>Holl.</i> Osm. 545 . . .	77 h
cyparissa <i>Cr.</i> Euph. 186		<b>Deloneura</b> <i>Trim.</i> 346		distinctesignatus <i>Strd.</i> Cup. 462 . . . . .	72 k
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cytaxis <i>Hew.</i> Iol. 401 . . .	68 g	demodocus Papilio 3, 11		<i>dilissimus</i> <i>Mab.</i> Gam. 513	
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cytora <i>Dbl. &amp; Hew.</i> Sal. 216		dendrophilus <i>Trim.</i> Men. 106 . . .	29 c	diversa <i>B.-Bak.</i> Lipt. 339 . . .	63 k
		dentata <i>E.-Sh.</i> Myc. 92		diversa <i>Bltr.</i> Gnoph. 83 . . .	26 c
		dentatus <i>Bltr.</i> Myl. 36 . . .	11 c	diversata <i>Holl.</i> Gorg. 557	
		dentatus <i>Swies.</i> Phas. 427		divisa <i>Bltr.</i> Epit. 351	
		dentigera <i>Bltr.</i> Pier. 42 . . .	15 b	dixeyi <i>Neave</i> Pier. 45	
		denuba <i>Plötz</i> Eagr. 573 . . .	76 d, c	diyllus <i>Hew.</i> Deud. 370 . . .	66 a, b
		<i>depauperata</i> Hesp. 566		djaelaclae <i>Wallgr.</i> Sar. 574 . . .	76 h
		depunctella <i>Strd.</i> Acr. 253		docusdemo <i>Suff.</i> Pap. 20	
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		derema <i>Strd.</i> Pent. 308		dolens <i>Mab.</i> Parn. 537	
		deritas <i>Hew.</i> Deud. 371 . . .	66 b	doleta <i>Ky.</i> Epit. 358 . . .	64 g
		dermaptera <i>Wallgr.</i> Myr. 378	66 f	doleta <i>Ky.</i> Ypth. 115 . . .	29 c
		derona <i>Sm.</i> Deud. 374		dollmani <i>B.-Bak.</i> Cup. 480 . . .	74 c
		derubescens <i>Eltr.</i> Acr. 251 . . .	57 b	dolomene <i>Hew.</i> Pseudacr. 194	46 c
		deserticola <i>Rbl.</i> Sar. 577		dolores <i>Suff.</i> Hypol. 386 . . .	67 b
		desjardinsi <i>Bsd.</i> Terias 65 . . .	22 c	dolorosus <i>Trim.</i> Cup. 483	
		desjardinsi <i>Guér.</i> Euploea 78 . . .	25 d	<i>dolus</i> <i>Plötz</i> Gorg. 557	
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		desolata <i>Bltr.</i> Myc. 93		<i>donaldsoni</i> <i>E.-Sh.</i> Pap. 19	
		despecta <i>Holl.</i> Lipt. 338		dopero <i>Suff.</i> App. 37	
		detecta <i>Neave</i> Acr. 271		doriclea <i>Drury</i> Diest. 168	
		detecta <i>Trim.</i> Parn. 537		dorippoides <i>Aur.</i> Hypol. 213	
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		<i>Dieranuropsis</i> 6		doubledayi <i>Guér.</i> Acr. 269 . . .	55 e
		<i>dido</i> <i>Arelia</i> 5		doubledayi <i>Hpffr.</i> Terac. 51 . . .	15 d
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havei <i>Bsd.</i> Parn. 536 . . . . .	78 f, g
haydni <i>Suff.</i> Plan. 242	



	Plat.		Plat.		Plat.
<i>Hypolycaena</i> 375		<i>infra</i> <i>Rog.</i> Prec. 225		<i>jacksoni</i> <i>E.-Sh.</i> Amaur. 76 . . . 21 c	
<i>Hypomelacna</i> <i>Aur.</i> 122, 123		<i>infumata</i> <i>Aur.</i> Dan. 72		<i>jacksoni</i> <i>E.-Sh.</i> Kall. 211 . . . 50 a	
<i>Hypomyrina</i> <i>Dre.</i> 365		<i>infumatus</i> <i>Btlr.</i> Terac. 58 . . . 18 f		<i>jacksoni</i> <i>E.-Sh.</i> Myl. 36	
<i>hypopolia</i> <i>Trim.</i> Cup. 484 . . . 74 f		<i>infusca</i> <i>Capr.</i> Diest. 168		<i>jacksoni</i> <i>E.-Sh.</i> Pap. 15 . . . 2 d, 3 a	
<i>hyposticta</i> <i>Mab.</i> Galerga 525		<i>infuscata</i> <i>Bartel</i> Myl. 32		<i>jahlusa</i> <i>Trim.</i> Char. 138 . . . 31 d	
<i>hypoxantha</i> <i>Jord.</i> Pseudacr. 197		<i>infuscata</i> <i>Stgr.</i> Acr. 258		<i>jalema</i> <i>Godt.</i> Acr. 280	
<i>hypoxanthina</i> <i>Mab.</i> & <i>Boull.</i> Sar. 578		<i>innocua</i> <i>Sm. &amp; Ky.</i> Euryph. 180		<i>jalone</i> <i>Btlr.</i> Terac. 54 . . . 16 g	
<i>Hypsidac</i> 5		<i>innocua</i> Euryph. 179		<i>jamesoni</i> <i>Dre.</i> Iol. 393	
<b>I.</b>					
<i>ialemia</i> <i>Dre.</i> Cer. 526		<i>ino</i> Argynn. 231		<i>jamesoni</i> <i>E.-Sh.</i> Calleagr. 571 . . . 76 d	
<i>ianthe</i> <i>Dbl.</i> Pier. 44		<i>inocellata</i> <i>Strd.</i> Ypth. 115 . . . 29 d		<i>jamesoni</i> <i>Godm.</i> Nept. 202 . . . 48 f	
<i>iasis</i> <i>Hew.</i> Iol. 401 . . . 68 f		<i>inores</i> <i>Hew.</i> Iol. 397 . . . 67 g, 68 a		<i>janetta</i> <i>Btlr.</i> Euph. 187	
<i>iaspis</i> <i>Dre.</i> Iolaus 398		<i>inornatus</i> <i>Trim.</i> Het. 550 . . . 77 k		<i>janisca</i> <i>Godt.</i> Acr. 261	
<i>ibara</i> <i>Plötz</i> Parn. 536		<i>insignis</i> <i>Dist.</i> Acr. 284 . . . 53 c		<i>jansei</i> <i>Swicsla</i> Lept. 106	
<i>ibitina</i> <i>Ward</i> Ypth. 113		<i>instabilis</i> <i>Mab.</i> Acl. 555 . . . 77 b		<i>jasius</i> <i>L.</i> Char. 126	
<i>iboina</i> <i>Ward</i> Hen. 101		<i>insulanus</i> <i>Aur.</i> Cup. 470		<i>jasius</i> Char. 121, 124	
<i>iccius</i> <i>Hew.</i> Myc. 85 . . . 26 d		<i>insularis</i> <i>Aur.</i> Plan. 245		<i>jason</i> <i>L.</i> Char. 126	
<i>icteria</i> <i>Mab.</i> Parosm. 546		<i>insularis</i> <i>E.-Sh.</i> Acr. 251		<i>jeanneli</i> <i>Mab.</i> & <i>Boull.</i> Cel. 581	
<i>icteriana</i> <i>Strd.</i> Oxyp. 553		<i>insularis</i> <i>Mab.</i> Tag. 571 . . . 76 c		<i>jefferyi</i> <i>Swics.</i> Cup. 480	
<i>ideoides</i> <i>Dew.</i> Lipt. 338 . . . 65 b		<i>interjecta</i> <i>Eltr.</i> Acr. 249		<i>jesous</i> <i>Guér.</i> Cup. 469 . . . 73 d	
<i>idis</i> <i>Oberth.</i> Pard. 531		<i>intermedia</i> <i>Aur.</i> Abis. 296 . . . 61 a		<i>jobina</i> <i>Btlr.</i> Terac. 54 . . . 16 g	
<i>Idmais</i> <i>Bsd.</i> 50		<i>intermedia</i> <i>Aur.</i> Elymn. 82		<i>jodutta</i> <i>F.</i> Acr. 249 . . . 57 e	
<i>idotea</i> <i>Bsd.</i> Eron. 62 . . . 21 d		<i>intermedia</i> <i>Aur.</i> Myl. 32 . . . 12 c		<i>jodutta</i> Acr. 240	
<i>igati</i> <i>Bsd.</i> Acr. 288 . . . 53 a		<i>intermedia</i> <i>Aur.</i> Plan. 244		<i>jodutta</i> <i>Ww.</i> Cym. 152 . . . 35 c	
<i>ignitus</i> <i>Mab.</i> Oxyp. 553 . . . 77 e		<i>intermedia</i> <i>Bart.</i> Euryph. 180		<i>jodutta</i> Cym. 153	
<i>ignobilis</i> <i>Btlr.</i> Myc. 87 . . . 27 b		<i>intermedia</i> <i>Grünb.</i> Lipt. 337		<i>johanna</i> <i>E.-Sh.</i> Al. 300 . . . 63 a	
<i>ignotus</i> <i>Trim.</i> Cup. 487 . . . 74 f		<i>intermedia</i> <i>Wichgr.</i> Acr. 271		<i>johnstoni</i> <i>Btlr.</i> Cym. 150	
<i>igola</i> <i>Trim.</i> Acr. 256		<i>intermediana</i> <i>Strd.</i> Acr. 265		<i>johnstoni</i> <i>Btlr.</i> Gorg. 557 . . . 77 b	
<i>ikelemba</i> <i>Aur.</i> Euryph. 176 . . . 41 e		<i>intermedius</i> <i>B.-Bak.</i> Cup. 480 . . . 74 b		<i>johnstoni</i> <i>Btlr.</i> Katr. 583 . . . 76 b	
<i>ilerda</i> <i>Mschlr.</i> Caen. 516 . . . 80 c		<i>intermixta</i> <i>Aur.</i> Diest. 168 . . . 39 c		<i>johnstoni</i> <i>Btlr.</i> Terac. 54	
<i>ilias</i> <i>Plötz</i> Sem. 518 . . . 78 h		<i>intermixta</i> <i>Aur.</i> Epit. 349		<i>johnstoni</i> <i>Crowl.</i> Pier. 48 . . . 15 a	
<i>ilithyia</i> <i>Drury</i> Byb. 207		<i>intermixtus</i> <i>Aur.</i> Cel. 581		<i>johnstoni</i> <i>Godm.</i> Acr. 250 . . . 57 d	
<i>ilithyia</i> <i>Byblia</i> 121		<i>interniplaga</i> <i>Aur.</i> Pap. 22		<i>johnstoni</i> <i>Holl.</i> Orth. 583	
<i>illustris</i> <i>Mab.</i> 583 . . . 76 b		<i>interniplaga</i> <i>Mab.</i> Cel. 582		<i>jordani</i> <i>Aur.</i> Prec. 222, 225	
<i>illyris</i> <i>Hew.</i> Pap. 26 . . . 8 a		<i>interposita</i> <i>Btlr.</i> Al. 299		<i>jordani</i> <i>Neave</i> Nept. 200 . . . 48 d	
<i>ilma</i> <i>Hew.</i> Lipt. 339 . . . 65 c		<i>interrupta</i> <i>Eltr.</i> Acr. 249		<i>jordani</i> <i>Rbl.</i> Neoc. 112 . . . 29 a	
<i>imitans</i> <i>Holl.</i> Euph. 190		<i>interrupta</i> <i>Strd.</i> Ypth. 115 . . . 29 d		<i>jordani</i> Neoc. 111	
<i>imitator</i> <i>Trim.</i> Pseudacr. 195		<i>interrupta</i> <i>Thur.</i> Acr. 281		<i>jordanus</i> <i>Stgr.</i> Iol. 406	
<i>immaculata</i> <i>Aur.</i> Lept. 31 . . . 10 a		<i>interruptella</i> <i>Strd.</i> Acr. 263		<i>juba</i> <i>F.</i> Lyc. 456 . . . 72 h	
<i>immaculata</i> <i>Grünb.</i> Lipt. 332		<i>intricata</i> <i>Aur.</i> Eupt. 154		<i>jucunda</i> <i>Btlr.</i> Rhop. 508 . . . 75 f	
<i>immaculata</i> <i>Stgr.</i> Lipt. 334		<i>iobates</i> <i>Hpfrr.</i> Cup. 489 . . . 72 k		<i>judith</i> <i>Weym.</i> Euph. 186	
<i>immaculata</i> <i>Suff.</i> Pent. 308		<i>Iolaus</i> <i>Hbn.</i> 389		<i>julianus</i> <i>Iolaus</i> 395, 396	
<i>immaculata</i> <i>Trim.</i> Del. 347		<i>Iolaus</i> 4, 257, 386		<i>julius</i> <i>Iol.</i> 395 . . . 68 e	
<i>immaculatus</i> <i>Suff.</i> Pap. 17		<i>iole</i> <i>F.</i> Lachm. 230 . . . 52 f		<i>junius</i> <i>Oberth.</i> Char. 126	
<i>imperator</i> <i>Btlr.</i> Terac. 54		<i>ione</i> <i>Godt.</i> Terac. 54 . . . 17 b		<i>juno</i> <i>Btlr.</i> Cup. 473 . . . 73 e	
<i>imperialis</i> <i>Btlr.</i> Char. 132		<i>iphis</i> <i>Drury</i> Pyrrh. 506 . . . 75 h		<i>juno</i> <i>Plötz</i> Pyrrh. 506 . . . 75 h	
<i>imperialis</i> Char. 136		<i>iranica</i> <i>Bien.</i> Pier. 48		<i>junodi</i> <i>Oberth.</i> Acr. 274	
<i>imperialis</i> <i>Lind.</i> Euph. 185		<i>iricolor</i> <i>Holl.</i> Caen. 517 . . . 80 c		<i>junodi</i> <i>Oberth.</i> Platyl. 524	
<i>impleta</i> <i>Grünb.</i> Pseudacr. 196		<i>Iridana</i> <i>Aur.</i> 345.		<i>junodi</i> <i>Trim.</i> Pap. 26	
<i>impunctata</i> <i>Bart.</i> Euph. 183		<i>Iridopsis</i> <i>Aur.</i> 345		<i>justitia</i> <i>Stgr.</i> Euph. 186	
<i>impura</i> <i>Elw. &amp; Edw.</i> Ypth. 116		<i>iris</i> <i>Aur.</i> Diest. 166 . . . 37 e, f		<b>K.</b>	
<i>inaequabilis</i> <i>Thur.</i> Euph. 183		<i>iris</i> <i>Bart.</i> Gnoph. 84		<i>kabrosae</i> <i>B.-Bak.</i> Cup. 484 . . . 71 f	
<i>inane</i> <i>Btlr.</i> Euph. 188 . . . 42 d, 44 c		<i>Iris</i> <i>Stgr.</i> 345		<i>kadiskos</i> <i>Dre.</i> Hypol. 385	
<i>inaria</i> <i>Cr.</i> Hypol. 213		<i>irrorata</i> <i>Trim.</i> Pseudon. 109		<i>kaduglii</i> <i>B.-Bak.</i> Spind. 415	
<i>inaria</i> Hypol. 72		<i>isabella</i> <i>Dudg.</i> Terat. 345		<i>kaffana</i> <i>R. &amp; J.</i> Cren. 205	
<i>inaureata</i> <i>Eltr.</i> Acr. 249 . . . 57 d, 59 d		<i>isca</i> <i>Hew.</i> Pseuder. 323 . . . 62 f, g		<i>kaffana</i> <i>Rollsch.</i> Acr. 279 . . . 59 f	
<i>incerta</i> <i>Aur.</i> Diest. 165 . . . 38 c		<i>isis</i> <i>Drury</i> Cup. 468 . . . 73 b, c		<i>kafuensis</i> <i>Neave</i> Deud. 372 . . . 66 b	
<i>incerta</i> <i>Grünb.</i> Kall. 211		<i>ismael</i> <i>Oberth.</i> Trap. 559		<i>kahlideni</i> Char. 140	
<i>incerta</i> <i>Sucll.</i> Pard. 530 . . . 79 e		<i>Ismene</i> 5		<i>kahlideni</i> <i>Hem. &amp; Dew.</i> Char. 139	
<i>incisa</i> <i>Rollsch.</i> Ater. 191		<i>ismeninae</i> 506		<i>kakana</i> <i>Eltr.</i> Acr. 287 . . . 60 e	
<i>incongrua</i> <i>Btlr.</i> Nept. 203 . . . 48 f		<i>ismenius</i> <i>Klug</i> Iol. 397 . . . 68 d		<i>Kallima</i> <i>Ww.</i> 211	
<i>inconspicua</i> <i>Bert.</i> Parn. 538		<i>isokani</i> <i>Sm.</i> App. 37		<i>kallimon</i> <i>Dre.</i> Spind. 413	
<i>inconspicua</i> <i>Dre.</i> Lyc. 454 . . . 72 e		<i>istaris</i> <i>Plötz</i> Myc. 90		<i>kamagamba</i> <i>B.-Bak.</i> Pard. 529	
<i>inconspicua</i> <i>Dre.</i> Pent. 307 . . . 63 a		<i>italus</i> <i>Hew.</i> Myc. 86 . . . 26 e		<i>kambove</i> <i>Neave</i> Cycl. 551 . . . 77 i	
<i>incredibilis</i> <i>Stgr.</i> Irid. 345 . . . 65 c		<i>itea</i> <i>Wkr.</i> Cup. 469		<i>kamilila</i> <i>B.-Bak.</i> Lyc. 452 . . . 71 k	
<i>incretus</i> <i>Btlr.</i> Terac. 60 . . . 20 c		<i>iterata</i> <i>Btlr.</i> Herp. 31		<i>kampala</i> <i>B.-Bak.</i> Lyc. 455 . . . 72 e	
<i>incretus</i> <i>Terac.</i> 62		<i>ithonus</i> <i>Btlr.</i> Terac. 57 . . . 15 f, 49 e, d		<i>kanguensis</i> <i>Holl.</i> Caen. 516 . . . 80 a	
<i>indamora</i> <i>Hew.</i> Cym. 150		<i>itonia</i> <i>Hew.</i> Ypth. 116		<i>karsana</i> <i>Mr.</i> Geg. 540	
<i>indefinita</i> <i>B.-Bak.</i> Lyc. 442 . . . 71 e		<i>itumbana</i> <i>Jord.</i> Plan. 242		<i>karschi</i> <i>Aur.</i> Acr. 262 . . . 56 c	
<i>indentata</i> <i>Btlr.</i> Plan. 244 . . . 59 e		<i>ituri</i> <i>B.-Bak.</i> Deud. 368 . . . 66 a		<i>karschi</i> Acr. 317	
<i>indeterminabilis</i> <i>Strd.</i> Cer. 527		<i>ituria</i> <i>B.-Bak.</i> Lyc. 438 . . . 71 e		<i>karschi</i> <i>Aur.</i> Diest. 166 . . . 37 d, e	
<i>indosa</i> <i>Trim.</i> Men. 106 . . . 29 c		<i>iturina</i> <i>Karsch</i> Euryph. 173 . . . 41 b		<i>karschi</i> <i>Aur.</i> Parn. 537	
<i>induna</i> <i>Trim.</i> Acr. 276 . . . 55 b		<i>iturina</i> <i>Sm.</i> Acr. 287		<i>karschi</i> <i>Bart.</i> Euph. 186	
<i>indusiata</i> <i>Mab.</i> Gorg. 557		<i>iulus</i> <i>Hew.</i> Iol. 393 . . . 67 d, e		<i>karschi</i> <i>Fruhl.</i> Pseudacr. 496	
<i>inferna</i> <i>Btlr.</i> Amaur. 76 . . . 24 b		<i>iulus</i> <i>Iol.</i> 390, 396		<i>kasai</i> <i>Dre.</i> Acl. 555	
<i>inferna</i> Amaur. 215		<i>iza</i> <i>Hew.</i> Spind. 414 . . . 69 g		<i>kassaiensis</i> <i>Niep.</i> Kall. 211	
<i>infida</i> <i>Btlr.</i> Pier. 41 . . . 13 b		<b>J.</b>		<i>katana</i> <i>Eltr.</i> Acr. 261	
<i>infima</i> <i>Sm.</i> Lipt. 338 . . . 64 a		<i>ja</i> <i>Dre.</i> Ab. 569 . . . 75 b		<i>katangae</i> <i>B.-Bak.</i> Cup. 483	
		<i>jacintha</i> <i>Don.</i> Hypol. 213		<i>katangae</i> <i>Neave</i> Amaur. 77	
		<i>jacksoni</i> <i>B.-Bak.</i> Hypol. 385 . . . 68 c		<i>Katreus</i> <i>Wts.</i> 583	
		<i>jacksoni</i> <i>E.-Sh.</i> Acr. 248 . . . 57 d			

	Plat.
kedassa <i>Dre.</i> Deud. 371 . . .	66 b
Kedestes <i>Wls.</i> 511	
kedonga <i>Sm.</i> Cup. 496	
keithloa <i>Wallgr.</i> Rhop. 509 .	75 g
kelembaensis <i>Strd.</i> Paron. 521	
kenia <i>Eltr.</i> Acr. 250	
kenia <i>Rog. Myc.</i> 89 . . .	27 c
kersteni <i>Gerst.</i> Lyc. 450	
khalifa <i>B.-Bak.</i> Epit. 355	
kheili <i>Stgr.</i> Char. 135 . . .	33 c
kigonserae <i>Aur.</i> Myc. 93	
kigonserensis <i>Wichgr.</i> Calleagr. 571	
kikideli <i>Bsd.</i> Nept. 200 . . .	48 d
kikuyuensis <i>Bart.</i> Myl. 31	
kikuyu <i>B.-Bak.</i> Lyc. 413	
kilusa <i>Sm.</i> Apat. 212 . . .	50 e
kingdoni <i>Bltr.</i> Trap. 559	
kinugnana <i>Sm.</i> Eupt. 155	
kirbyi <i>Aur.</i> Pent. 311 . . .	61 i
kirbyi <i>Bltr.</i> Hypol. 215	
kirbyi <i>Dew.</i> Hewit. 360 . . .	61 f
kirbyi <i>Hew.</i> Pap. 26 . . .	8 a
kirki <i>Bltr.</i> Char. 136	
kisaba <i>Joic. &amp; Talb.</i> Cup. 472	
kitobolensis <i>Strd.</i> Deud. 375	
kituina <i>Karsch.</i> Hesp. 561	
kitungulensis <i>Strd.</i> Char. 137	
kivuana <i>Jord.</i> Plan. 246	
kivuensis <i>Joic. &amp; Talb.</i> Cel. 582	
kiruensis <i>Joic. &amp; Talb.</i> Cup. 481	
kivuensis <i>Grünb.</i> Myl. 31	
kivuensis <i>Grünb.</i> Acr. 279	
knutsoni <i>Aur.</i> Myl. 36 . . .	11 d
koana <i>Strd.</i> Cup. 488 . . .	71 g
kobela <i>Trim.</i> Sar. 577 . . .	76 f
koeli <i>Grünb.</i> Myc. 85	
kohli <i>Aur.</i> Deud. 370	
kontu <i>Karsch.</i> Cup. 467 . . .	73 c
kordofani <i>B.-Bak.</i> Capr. 570	
kraka <i>Aur.</i> Acr. 287 . . .	53 b
krausei <i>Dew.</i> Mim. 317 . . .	62 b
krausi = krausei, Mim. 317	
kückenii <i>Suff.</i> Pier. 45	
künowi <i>Dew.</i> Pseudacr. 197 .	46 b

## L.

labdaca <i>Ww.</i> Libyth. 293 . .	61 a
labordei <i>Oberth.</i> Amp. 518	
lachares <i>Hew.</i> Lyc. 452 . .	71 k
Lachnoenema <i>Trim.</i> 362	
Lachnoptera <i>Dbl.</i> 229	
Lachnoptera 3, 121	
lacida <i>Hew.</i> Caen. 516 . . .	80 d
lacides <i>Hew.</i> Lyc. 451 . . .	72 d
lacreuzei <i>Oberth.</i> Hesp. 565	
lacidus <i>B.-Bak.</i> Cup. 486	74 d
lactea <i>Plötz.</i> Ab. 569, 570	
lactepennis <i>Bltr.</i> Herp. 31 .	10 b, c
lactefunctus <i>Karsch.</i> Char. 130	30 d
lacteus <i>Mab.</i> Tag. 571 . . .	76 c
lactimaculata <i>Eltr.</i> Acr. 255 .	60 a
lactinatus <i>Bltr.</i> Cup. 467	
lacus <i>Thur.</i> Hen. 98	
laelioides <i>Rbl.</i> Sar. 577	
laelius <i>Mab.</i> Sar. 577	
laeta <i>Schltz.</i> Mim. 311 . . .	62 c
laeta <i>Weym.</i> Pier. 41 . . .	15 a
laetitia <i>Plötz.</i> Euryph. 171 .	41 c
laetitia <i>Eur.</i> 173	
lais <i>Bltr.</i> Terac. 57 . . .	19 c
lais <i>Trim.</i> Libyth. 291 . . .	61 a
lakuma <i>Bltr.</i> Euph. 183	
lalos <i>Dre.</i> Iol. 396 . . .	67 f, g
lamani <i>Aur.</i> Myc. 91 . . .	27 e
lamba <i>Neave.</i> Plat. 521	
lamborni <i>B.-Bak.</i> Asl. 312 . .	64 b
lamborni <i>Dre.</i> Neave. 318 . .	64 d
lamborni <i>Eltr.</i> Acr. 259	

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lamias <i>Hew.</i> Lyc. 450 . . .	71 i
Lampides <i>Hbn.</i> 458, 468, 471	
lamprocles <i>Hew.</i> Lyc. 451 .	72 b
landbecki <i>Dre.</i> Eagr. 573 . .	76 e
landbecki <i>Dre.</i> Mim. 315 . .	63 b, c
languida <i>Bart.</i> Sal. 218	
lanzi <i>Bart.</i> Terac. 56 . . .	18 c
laodice <i>Drury.</i> Char. 111 . .	32 c
laon <i>Hew.</i> Iol. 397 . . .	67 g
laonides <i>Aur.</i> Iol. 394 . . .	67 e
lapydes <i>Suff.</i> Pap. 21	
lara <i>L.</i> Leptom. 423 . . .	70 b
larea <i>Neave.</i> Parn. 539	
larina <i>Bsd.</i> Pier. 43	
Larinopoda <i>Bltr.</i> 328	
Larinopoda 310, 491	
laronia <i>Hew.</i> Osm. 515 . . .	77 f
larydas <i>Cr.</i> Lyc. 449 . . .	71 h
larydas <i>Lyc.</i> 445, 450, 452	
Lasiocampidae 6	
lasius <i>Suff.</i> Iol. 396	
lasti <i>Sm.</i> App. 37 . . .	11 e
lasti <i>Sm.</i> Char. 130 . . .	31 a
lasti <i>Sm. &amp; Ky.</i> Lyc. 411 . .	71 g
lasti <i>Sm. &amp; Ky.</i> Pent. 308 . .	61 g
lasti <i>Sm. Ky.</i> Pier. 48	
lata <i>Neave.</i> Pier. 41	
latercula <i>Holl.</i> Caen. 517 . .	79 k
lathyana <i>Strd.</i> Pier. 45	
laticinctus <i>Bltr.</i> Char. 127	
latifasciata <i>E.-Sh.</i> Plan. 212 .	58 d
latifasciata <i>Grünb.</i> Acr. 218	
latifasciata <i>Suff.</i> Plan. 213 .	59 c
latifimbriata <i>E.-Sh.</i> Spind. 415	
latimarginata <i>Sm.</i> Lar. 329 .	63 f
lativittata <i>Strd.</i> Nept. 200	
latroillanus <i>Godt.</i> Pap. 22 . .	3 d
latrunculatus <i>Grünb.</i> Cup. 483	
laufella <i>Hew.</i> Pter. 513 . . .	80 g
laura <i>Ky.</i> Pent. 308 . . .	61 g
leander <i>Plötz.</i> Andr. 522 . . .	79 g
lebona <i>Hew.</i> Hypol. 383 . . .	67 a, 68 b
leda <i>Bsd.</i> Eron. 62 . . .	21 e
leda <i>Gerst.</i> Physc. 109 . . .	28 f
leda <i>L.</i> Melan. 82	
leda <i>Melanitis</i> 4	
leggei <i>Her.</i> Chion. 512	
legonuca <i>Suff.</i> Pap. 23	
lema <i>Neave.</i> Ked. 543 . . .	78 c
lemnos <i>Hew.</i> Lyc. 442 . . .	71 e, f
lemnos <i>Lyc.</i> 440	
lemolea <i>Dre.</i> Spalg. 433 . . .	71 b
Lemoniidae 293	
Lemoniinae 294	
lentiginosa <i>Holl.</i> Ked. 543 . .	78 d
leodice <i>Cr.</i> Prec. 223	
leona <i>B.-Bak.</i> Epit. 358	
leona <i>Stgr.</i> Acr. 255	
leona <i>Aur.</i> Asl. 313 . . .	64 c
leonensis <i>B.-Bak.</i> Epit. 358	
leonensis <i>Epit.</i> 350	
leonidas <i>F.</i> Pap. 22 . . .	7 d
leonidas <i>Pap.</i> 11	
leonina <i>B.-Bak.</i> Acr. 255	
leonina <i>B.-Bak.</i> Deud. 368	
leonina <i>B.-Bak.</i> Lyc. 439	
leonina <i>E.-Sh.</i> Spind. 416 . .	70 a
leonina <i>Stgr.</i> Epit. 355 . . .	65 e
leonina <i>Epit.</i> 350	
leoninus <i>Bltr.</i> Char. 140 . . .	32 b
leonis <i>Aur.</i> Cym. 153 . . .	36 b
leonis <i>Aur.</i> Diest. 169 . . .	37 c, 40 a
leonis <i>Stgr.</i> Pseudal. 380 . .	66 g
leonora <i>Plötz.</i> Caen. 516 . .	80 b
leopoldi <i>Suff.</i> Pap. 17	
leopoldina <i>Aur.</i> Plan. 242 . .	59 c
lepeletieri <i>Latr.</i> Het. 550 . .	77 k
lepenula <i>Wallgr.</i> Ked. 512	
leptala <i>Courv.</i> Lyc. 456	
Leptalina <i>Mab.</i> 549	
leptines <i>Hew.</i> Lyc. 455 . . .	72 f
leptis <i>Jord.</i> Plan. 212 . . .	59 d
leptoglana <i>Karsch.</i> Myc. 93	

	Plat.
Leptomyrina <i>Bltr.</i> 421	
Leptoneura <i>Wallgr.</i> 106	
Leptoneura 104	
Leptosia <i>Hbn.</i> 31	
Leptosia 30	
leptotypa <i>B.-Bak.</i> Euryph. 179	
lermanni <i>Aur.</i> Nept. 202 . . .	48 f
leroma <i>Wallgr.</i> Crud. 432 . . .	70 i
lerothodi <i>Trim.</i> Cup. 480	
Leto 6	
letsea <i>Trim.</i> Cup. 480 . . .	73 k
leucoceros <i>Oberth.</i> Trich. 389 .	67 c
Leucochitonca <i>Wallgr.</i> 568	
Leucochloë 48	
leucogaster <i>Mab.</i> Ab. 368 . . .	75 a
leucographa <i>Rbb.</i> Acr. 285 . .	53 e
leucogyne <i>Bltr.</i> Pier. 41	
Leucolepis <i>Karsch.</i> 330	
leucomelas <i>Oberth.</i> Hesp. 565	
leucon <i>Mab.</i> Cup. 487	
leucophaea <i>Holl.</i> Parn. 539 . .	77 b
Leucophasia 198	
leucopyga <i>Aur.</i> Acr. 273 . . .	55 e
leucopyga <i>Mab.</i> Acl. 555	
leucosoma <i>Mab.</i> Caen. 516	
leucospilus <i>Rothsch.</i> Pap. 14	
leucotincta <i>Strd.</i> Prec. 225	
leucyana <i>Hew.</i> Euliph. 341 . .	64 c
levassori <i>Oberth.</i> Pap. 23 . . .	9 b
levebu <i>Wallgr.</i> Ab. 569	
levis <i>Hew.</i> Lyc. 444 . . .	71 i
levubu = levebu, defecta Ab. 570	
lia <i>Mab.</i> Acr. 285 . . .	53 e
liacea <i>Suff.</i> Acr. 268	
liagore <i>Klug.</i> Terac. 59 . . .	19 a
liara <i>Dre.</i> Hypol. 383 . . .	67 a
libentina <i>Hew.</i> Pseuder. 320	
libcon <i>Dre.</i> Rhop. 508	
libya <i>Dist.</i> Melan. 83 . . .	26 b
libyssa <i>Hew.</i> Lipt. 331 . . .	63 g
libyssa <i>Lipt.</i> 334	
Libythea <i>F.</i> 293	
Libythea 4	
lichas <i>Dbl.</i> Char. 139	
licinia <i>Mab.</i> Deud. 374 . . .	66 d
licinia <i>Trim.</i> Deud. 374	
ligata <i>R. &amp; J.</i> Catacr. 218	
ligora <i>Hew.</i> Paron. 520 . . .	79 h
ligora <i>Paron.</i> 522	
ligures <i>Hew.</i> Lyc. 440 . . .	71 f
liguroides <i>Strd.</i> Lyc. 440	
liliana <i>Sm.</i> Pier. 47 . . .	14 f
Limacodidae 5	
limbata <i>Crowl.</i> Hypol. 215	
limbata <i>Holl.</i> Pent. 308	
limbata <i>Ky.</i> Citr. 326	
limbata <i>Trim.</i> Durb. 303	
limnotia <i>Klug.</i> Prec. 221	
limonata <i>Eltr.</i> Acr. 253	
limpopona <i>Wallgr.</i> Cycl. 551	
lindica <i>Strd.</i> Acr. 275	
lindneri <i>Dew.</i> Pier. 45 . . .	12 e, 14 e
linearis <i>Aur.</i> Cup. 465	
lineata <i>Aur.</i> Euryt. 210	
lingeus <i>Cr.</i> Cup. 463 . . .	73 a
liodes <i>Hew.</i> Lyc. 443	
liodes <i>Lyc.</i> 441	
Liparidae 5	
liparis <i>Sm.</i> Lyc. 452	
Liphyra 314	
liponesco <i>Suff.</i> Pap. 25	
Liptena <i>Hew.</i> 329	
Liptena 4, 61, 310, 318, 327, 328, 341	
Lipteninae 297	
Liptenini 311	
liraca <i>Hew.</i> Lar. 329 . . .	63 d
lisidora <i>Aur.</i> Euryph. 158	
liszli <i>Suff.</i> Acr. 273	
lita <i>R. &amp; J.</i> Euryt. 209	
lithas <i>Hew.</i> Lyc. 439 . . .	71 c



	Plat.
<i>Lithosiidae</i> 5	
<i>littoralis</i> <i>Ellr.</i> Acr. 275	
<i>livia</i> <i>Klug</i> Deud. 375 . . . . .	66 e
<i>livida</i> <i>Trim.</i> Lyc. 444 . . . . .	72 g
<i>livingstonei</i> <i>Suff.</i> Nept. 200	
<i>loa</i> <i>Strd.</i> Lyc. 442	
<i>lobemba</i> <i>Ellr.</i> Acr. 282 . . . . .	54 c
<i>lobengula</i> <i>E.-Sh.</i> Amaur. 77 . . . . .	25 d
<i>locuples</i> <i>Sm.</i> Lyc. 455 . . . . .	72 f
<i>lodra</i> <i>Plözl</i> Parn. 538	
<i>lofu</i> <i>Neave</i> Ab. 569 . . . . .	75 a
<i>lofua</i> <i>Ellr.</i> Acr. 273 . . . . .	60 e
<i>lois</i> <i>Bllr.</i> Cup. 494	
<i>loncona</i> <i>Suff.</i> Pap. 26	
<i>longipennis</i> <i>Wkr.</i> Xanthospil. 190	
<i>lorisona</i> <i>Hew.</i> Deud. 374 . . . . .	66 d
<i>lornieri</i> <i>Dist.</i> Pap. 20 . . . . .	8 a
<i>lorti</i> <i>E.-Sh.</i> Terac. 55 . . . . .	17 d, 18 a
<i>lortzingi</i> <i>Suff.</i> Pier. 44 . . . . .	42 f
<i>losinga</i> <i>Hew.</i> Euph. 183 . . . . .	45 b, c
<i>louisa</i> <i>Suff.</i> Terac. 55 . . . . .	17 c
<i>louisae</i> <i>E.-Sh.</i> Cup. 466	
<i>loveni</i> <i>Aur.</i> Cup. 481	
<i>Loxolexis</i> <i>Karsch</i> 583	
<i>loxura</i> <i>Rbl.</i> Spind. 416	
<i>lualabae</i> <i>Neave</i> Acr. 275	
<i>lucasi</i> <i>Doun.</i> Cym. 146 . . . . .	34 a
<i>lucasi</i> <i>Cymoth.</i> 142	
<i>lucasi</i> <i>Grand.</i> Terac. 64 . . . . .	21 a
<i>lucens</i> = <i>lugens</i> <i>Sar.</i> 574	
<i>lucetia</i> <i>Hew.</i> Eagr. 573 . . . . .	76 f
<i>lucida</i> <i>Bllr.</i> Physc. 108	
<i>lucidella</i> <i>Mab.</i> Sar. 577 . . . . .	76 e
<i>lucidus</i> <i>Trim.</i> Cup. 495 . . . . .	74 i
<i>lucretia</i> <i>Cr.</i> Pseudacr. 197 . . . . .	46 a
<i>lucretia</i> <i>Pseudacr.</i> 216	
<i>lucretia</i> <i>Dre.</i> Ab. 569	
<i>lucretia</i> <i>Sm. &amp; Ky.</i> Lyc. 454	
<i>lucretilis</i> <i>Hew.</i> Lyc. 453 . . . . .	72 c
<i>lucretilis</i> <i>Triclema</i> 454	
<i>lucretius</i> <i>Cr.</i> Char. 130 . . . . .	30 d
<i>luderitzi</i> <i>Suff.</i> Terac. 57	
<i>Ludia</i> <i>Wallgr.</i> 6	
<i>luehderi</i> <i>Plözl</i> Caen. 516	
<i>lugens</i> <i>Hpfrr.</i> Parn. 537 . . . . .	78 e
<i>lugens</i> <i>Rog.</i> Sar. 574 . . . . .	76 h
<i>lugens</i> <i>Schlze.</i> Kall. 241	
<i>lukabas</i> <i>Dre.</i> Iol. 395 . . . . .	67 f
<i>lukokescha</i> <i>Karsch</i> Lyc. 454	
<i>luniri</i> <i>B.-Bak.</i> Acr. 264 . . . . .	60 g
<i>luna</i> <i>Dre.</i> Lachn. 364 . . . . .	65 h
<i>lunaris</i> <i>Weym.</i> Pent. 308	
<i>lunifer</i> <i>Rbl.</i> Cup. 464	
<i>lunigera</i> <i>Rolhsch.</i> Char. 137	
<i>lunula</i> <i>Dre.</i> Sar. 577 . . . . .	76 g
<i>lunulata</i> = <i>lunulata</i> 439	
<i>lunulata</i> <i>Trim.</i> Lyc. 441 . . . . .	74 c, f, g, h
<i>luperea</i> <i>Hew.</i> Euph. 184	
<i>luperea</i> <i>Euph.</i> 185	
<i>lurida</i> <i>Bllr.</i> Cym. 147 . . . . .	34 d
<i>lurinus</i> <i>Bllr.</i> Pap. 25	
<i>lusones</i> <i>Hew.</i> Lyc. 455 . . . . .	72 f
<i>lusones</i> <i>Lyc.</i> 435	
<i>lustella</i> <i>Suff.</i> Plan. 245	
<i>lutacea</i> <i>Rolhsch.</i> Char. 136	
<i>lutealba</i> <i>Ellr.</i> Acr. 249	
<i>luteofasciata</i> <i>Barl.</i> Euph. 184	
<i>luteola</i> <i>B.-Bak.</i> Euryph. 179	
<i>luleomaculata</i> <i>Grünb.</i> Mim. 316	
<i>luteostriata</i> <i>B.-Bak.</i> Diest. 161	39 c
<i>lutosa</i> <i>Plözl</i> Spind. 415	
<i>lutosa</i> <i>Suff.</i> Plan. 245	
<i>lux</i> <i>Holl.</i> Osm. 545 . . . . .	77 g
<i>lyaeus</i> <i>Dbl.</i> Pap. 19 . . . . .	5 b
<i>lybia</i> <i>Stgr.</i> Lipt. 334 . . . . .	63 g
<i>Lycaenesthes</i> <i>Mr.</i> 434	
<i>Lycaenesthes</i> 4, 434, 466, 470	
<i>Lycaenidae</i> 297	
<i>Lycaeninae</i> 361	
<i>Lycaenopsinae</i> 457	
<i>Lycaenopsis</i> 457	

	Plat.
<i>lyce</i> <i>Wkr.</i> Cup. 497	
<i>lycegenes</i> <i>Trim.</i> Phas. 431 . . . . .	70 i
<i>lychnaptes</i> <i>Holl.</i> Lyc. 455 . . . . .	72 g
<i>lychnides</i> <i>Hew.</i> Lyc. 454 . . . . .	72 c, d
<i>lycia</i> <i>F.</i> Acr. 258 . . . . .	56 e
<i>lycoa</i> <i>Godl.</i> Acr. 250	
<i>lycoroides</i> <i>Bsd.</i> Acr. 253	
<i>lycolus</i> <i>Sm.</i> Lyc. 454	
<i>lygus</i> <i>Dre.</i> Acr. 271	
<i>Lymantria</i> 5	
<i>lyncurium</i> <i>Trim.</i> Phas. 431 . . . . .	70 i
<i>lynx</i> <i>Mschlr.</i> Amp. 547	
<i>lysandra</i> <i>Stoll</i> Diest. 168 . . . . .	37 c
<i>lysicles</i> <i>Hew.</i> Lyc. 453 . . . . .	74 k
<i>lysimon</i> <i>Hbn.</i> Cup. 495	
<i>lyzanius</i> <i>Hew.</i> Lyc. 454 . . . . .	72 d, e

M.

<i>mabangi</i> <i>B.-Bak.</i> Micr. 340	
<i>mabca</i> <i>Holl.</i> Parn. 539 . . . . .	77 e
<i>mabella</i> <i>Sm.</i> Pier. 47	
<i>mabillei</i> <i>Auriv.</i> Herp. 32 . . . . .	22 g
<i>mabillei</i> <i>Aur.</i> Hypol. 387	
<i>mabillei</i> <i>Aur.</i> Pseudon. 109	
<i>mabillei</i> <i>Aur.</i> Ypth. 144	
<i>mabillei</i> <i>Holl.</i> Gastr. 558	
<i>Macaria</i> 7	
<i>macaria</i> <i>F.</i> Plan. 240 . . . . .	57 f
<i>macarina</i> <i>Bllr.</i> Acr. 248 . . . . .	57 e
<i>macarioides</i> <i>Aur.</i> Plan. 244 . . . . .	57 f, 58 e, f
<i>macarista</i> <i>E.-Sh.</i> Plan. 243 . . . . .	59 b, d
<i>machacoana</i> <i>Bllr.</i> Hesp. 564	
<i>machequena</i> <i>Sm.</i> Acr. 286 . . . . .	53 d
<i>mackeni</i> <i>Trim.</i> Acl. 555 . . . . .	77 a
<i>mackimmoni</i> <i>E.-Sh.</i> Pap. 17 . . . . .	4 c
<i>macomo</i> <i>Trim.</i> Ked. 542 . . . . .	78 b
<i>macrops</i> <i>Patula</i> 6	
<i>macrosticha</i> <i>B.-Bak.</i> Plan. 242	
<i>macrostictus</i> <i>Holl.</i> Cel. 582 . . . . .	76 b
<i>macularis</i> <i>Aur.</i> Pier. 43 . . . . .	14 a
<i>maculata</i> <i>Aur.</i> Euryph. 178 . . . . .	40 a
<i>maculata</i> <i>Aur.</i> Pier. 44	
<i>maculata</i> <i>Aur.</i> Terias 64 . . . . .	22 c
<i>maculata</i> <i>Ky.</i> Pent. 309 . . . . .	61 b
<i>maculata</i> <i>Mab.</i> Sar. 578	
<i>maculatissima</i> <i>Suff.</i> Pap. 47	
<i>maculatus</i> <i>Hmps.</i> Cel. 581	
<i>maculatus</i> <i>Suff.</i> Char. 126	
<i>maculatus</i> <i>Suff.</i> Pap. 43	
<i>maculatus</i> <i>Suff.</i> Char. 126	
<i>maculifera</i> <i>Mab. &amp; Boull.</i> Sar. 574	
<i>maculiventris</i> <i>Sm. &amp; Ky.</i> Acr. 256	
<i>madagascariensis</i> <i>Bsd.</i> Cren. 206 . . . . .	49 a
<i>madagascariensis</i> <i>Guén.</i> Prec. 226	
<i>madagascariensis</i> <i>Lue.</i> Eux. 124 . . . . .	29 e
<i>madagascariensis</i> <i>Mab.</i> Atell. 231	
<i>madagascariensis</i> <i>Mab.</i> Hypol. 246	
<i>madegassorum</i> <i>Aur.</i> Ant. 228	
<i>maderakal</i> <i>Guér.</i> Par. 105 . . . . .	28 f
<i>maderakal</i> <i>Parage</i> 4	
<i>madetes</i> <i>Hew.</i> Myc. 89 . . . . .	27 d
<i>maeander</i> <i>Plözl</i> Lyc. 455 . . . . .	72 e
<i>maera</i> <i>Par.</i> 405	
<i>maesa</i> <i>Hew.</i> Iol. 394 . . . . .	67 e, f
<i>maeva</i> <i>Mab.</i> Hen. 102	
<i>maevius</i> <i>Stgr.</i> Hen. 97 . . . . .	28 a
<i>mafa</i> <i>Trim.</i> Hesp. 565 . . . . .	75 c
<i>mafiae</i> <i>Stgr.</i> Cren. 205	
<i>magna</i> <i>Aur.</i> Lachn. 364 . . . . .	65 f
<i>magniplaga</i> <i>Heron</i> Gnoph. 84	
<i>magus</i> <i>F.</i> Pseud. 109 . . . . .	29 c
<i>mahallakoaena</i> <i>Wallgr.</i> Cup. 488	73 i

	Plat.
<i>mahela</i> <i>Bsd.</i> Acr. 286 . . . . .	53 c
<i>mahobo</i> <i>Sm.</i> Pier. 47	
<i>mahoboides</i> <i>Holl.</i> Pier. 46	
<i>mahota</i> <i>Sm.</i> Lyc. 455 . . . . .	72 g
<i>maimuna</i> <i>Bllr.</i> Terac. 54	
<i>mairessei</i> <i>Aur.</i> Acr. 253	
<i>major</i> <i>B.-Bak.</i> Cup. 483, 486	
<i>major</i> <i>Trim.</i> Neoc. 112	
<i>majorella</i> <i>Mab.</i> Sar. 575 . . . . .	76 g
<i>majungana</i> <i>Sm.</i> App. 37	
<i>makala</i> <i>B.-Bak.</i> Deud. 368 . . . . .	65 k
<i>makala</i> <i>B.-Bak.</i> Euryph. 179	
<i>makala</i> <i>B.-Bak.</i> Leptom. 422	
<i>makala</i> <i>B.-Bak.</i> Lyc. 455 . . . . .	72 f, g
<i>makala</i> <i>Lyc.</i> 456	
<i>makala</i> <i>B.-Bak.</i> Pard. 539	
<i>malagrida</i> <i>Wallgr.</i> Phas. 427	
<i>malaria</i> <i>Suff.</i> Pier. 43	
<i>malathana</i> <i>Bsd.</i> Cup. 484 . . . . .	74 f
<i>malathana</i> <i>Cup.</i> 475	
<i>Malaza</i> <i>Mab.</i> 559	
<i>malchus</i> <i>Mab.</i> Trap. 559	
<i>malgacha</i> <i>Bsd.</i> Cycl. 551	
<i>malthina</i> <i>Hew.</i> Caen. 517	
<i>malua</i> <i>Neave</i> Ked. 543 . . . . .	78 d
<i>Mamestra</i> 6	
<i>manandaza</i> <i>Ward</i> Acr. 286 . . . . .	53 d
<i>mananhari</i> <i>Ward</i> Terac. 61 . . . . .	20 g
<i>manca</i> <i>Thur.</i> Acr. 275	
<i>mandanes</i> <i>Hew.</i> Myc. 89 . . . . .	27 c
<i>mandarinula</i> <i>Holl.</i> Terias 65 . . . . .	22 e
<i>mandersi</i> <i>Dre.</i> Cup. 474	
<i>mandinga</i> <i>Fldr.</i> Euryph. 172 . . . . .	41 d
<i>mangana</i> <i>Rbl.</i> Hesp. 566	
<i>mangoura</i> <i>Hew.</i> Pap. 18	
<i>manica</i> <i>Trim.</i> Char. 137 . . . . .	33 b
<i>manjaca</i> <i>Bsd.</i> Acr. 265	
<i>manlius</i> <i>F.</i> Pap. 19	
<i>Manorina</i> <i>Mab.</i> 559	
<i>manoro</i> <i>Ward</i> Smer. 229 . . . . .	52 d
<i>mansya</i> <i>Ellr.</i> Acr. 274 . . . . .	60 a
<i>mapongua</i> <i>Holl.</i> Pseudor. 322	
<i>maracanda</i> <i>Hew.</i> Caen. 516 . . . . .	80 c
<i>maracandica</i> = <i>maracanda</i> 516	
<i>maranestra</i> <i>Ward</i> Acr. 286	
<i>maranga</i> <i>Bllr.</i> Parn. 537	
<i>marchalii</i> <i>Bsd.</i> Parn. 536	
<i>marcus</i> <i>Strd.</i> Parn. 540	
<i>mardania</i> <i>F.</i> Euryph. 177 . . . . .	40 c, d
<i>margarita</i> <i>Suff.</i> Lipt. 334	
<i>margaritacea</i> <i>E.-Sh.</i> Pier. 39	
<i>margaritaceus</i> <i>E.-Sh.</i> Cup. 467 . . . . .	73 c
<i>margaritata</i> <i>Holl.</i> Art. 519 . . . . .	80 f
<i>marginalis</i> <i>Aur.</i> Cup. 470	
<i>marginalis</i> <i>Ky.</i> Citr. 326	
<i>marginata</i> <i>Ky.</i> Epit. 354 . . . . .	65 e
<i>marginata</i> <i>Plözl</i> Asl. 341	
<i>marginatus</i> <i>R. &amp; J.</i> Char. 132	
<i>marginata</i> <i>Mab.</i> Lepl. 31	
<i>margites</i> <i>Mab.</i> Hypol. 387	
<i>maria</i> <i>Suff.</i> Stug. 388	
<i>marianna</i> <i>Suff.</i> Pent. 307	
<i>marmorata</i> <i>Aur.</i> Hen. 100	
<i>marmorata</i> <i>Sm.</i> Acr. 277	
<i>marmorea</i> <i>Bllr.</i> Stug. 388 . . . . .	68 c
<i>marnoana</i> <i>Rog.</i> Colias 65	
<i>marnois</i> <i>Rog.</i> Acr. 268	
<i>maroides</i> <i>Nic.</i> Amp. 547	
<i>Marpesia</i> 203	
<i>Marpesiinae</i> 203	
<i>marpessa</i> <i>Hpfrr.</i> Nept. 199	
<i>marshalli</i> <i>Aur.</i> Ked. 542	
<i>marshalli</i> <i>Aur.</i> Phas. 427	
<i>marshalli</i> <i>B.-Bak.</i> Lyc. 451 . . . . .	71 i
<i>marshalli</i> <i>Bllr.</i> Asl. 343 . . . . .	64 c
<i>marshalli</i> <i>Bllr.</i> Cup. 463	
<i>marshalli</i> <i>Bllr.</i> Terias 65 . . . . .	22 e
<i>marshalli</i> <i>Neave</i> Aphn. 409 . . . . .	69 d
<i>marshalli</i> <i>Snell.</i> Parn. 535	
<i>marshalli</i> <i>Trim.</i> Mim. 316 . . . . .	62 c
<i>marshalli</i> <i>Mimacr.</i> 72	
<i>martius</i> <i>F.</i> Myc. 95 . . . . .	27 f



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<i>martius</i> Myc. 91		<i>mercedonia</i> Karsch Dan. 72 .	23 b	<i>mirza</i> Amp. 531	
<i>maryra</i> Mab. Hypol. 387		<i>mercedonia</i> Karsch Dan. 13		<i>mirza</i> Plötz Cup. 469 . . .	73 d
<i>masai</i> B.-Bak. Cup. 485		<i>mercutius</i> Sm. & Ky. Pap. 25		<i>misa</i> Strd. Cym. 153	
<i>masamba</i> Ward Acr. 257 . .	56 g	<i>meriones</i> Fldr. Pap. 14		<i>misippus</i> L. Hypol. 213	
<i>masaris</i> Oberth. Acr. 249 . .	57 c	<i>mermeros</i> Mab. Trich. 389		<i>misippus</i> Hypolimn. 72	
<i>mashuna</i> Trim. Ypth. 116 .	29 b	<i>mermis</i> Dre. Iol. 400 . . .	68 e	<i>mixophyes</i> Holl. Nept. 202	
<i>mashunus</i> Trim. Cup. 475		<i>merope</i> Cr. Pap. 13		<i>mixta</i> Aur. Eron. 62	
<i>masikora</i> Mab. Hen. 104		<i>merops</i> Weym. Oxyp. 554		<i>mixta</i> Aur. Pap. 14	
<i>masindae</i> B.-Bak. Mim. 317		<i>meruana</i> Rog. Plan. 242		<i>mixtus</i> Rothsch. Char. 132	
<i>masoura</i> Hew. Hen. 102		<i>meruanus</i> Aur. Cup. 473		<i>möbii</i> Suff. Pap. 23 . . .	9 c
<i>massiva</i> Mab. & Vuill. Caen.		<i>mesentina</i> Cr. Pier. 41		<i>moquersyi</i> Holl. Gorg. 557 .	77 c
516		<i>mesogena</i> Karsch Myc. 89 .	27 d	<i>modesta</i> Ky. Lipt. 338 . . .	62 e
<i>mathias</i> Chapra 584		<b>Mesoxantha</b> Aur. 208		<i>modesta</i> Suff. Acr. 268	
<i>mathias</i> F. Parn. 538		<i>Mesoxantha</i> 121		<i>modesta</i> Trim. Spind. 413	
<i>mathilda</i> Suff. Iol. 393		<i>messapus</i> Godt. Cup. 488 . .	73 k	<i>modestus</i> Rbl. Cel. 582	
<i>matuta</i> Karsch Myc. 96 . . .	27 g	<i>messapus</i> Cup. 495		<i>moforsa</i> Suff. Plan. 243	
<i>maucensis</i> B.-Bak. Cup. 483		<i>Metaerenis</i> Btlr. 158		<i>mohopaani</i> Wallgr. Parn. 538	
<i>mauritiana</i> Mab. & Boull. Eagr.		<i>metagone</i> Holl. Terac. 59		<i>mohozutza</i> Wallgr. Ked. 543 .	78 d
572		<i>metaleucus</i> Karsch Megal. 362	65 f	<i>mokeezi</i> Wallgr. Cel. 582 . .	76 b
<i>mauritiana</i> Mand. Ant. 228		<i>metanira</i> Holl. Nept. 201		<i>mollitia</i> Karsch Myc. 90 . .	27 e
<i>mawamba</i> B.-Bak. Diest. 163	38 e	<i>metaprotea</i> Btlr. Acr. 248		<i>molomo</i> Trim. Phas. 427 . .	70 f
<i>maxima</i> Neave Sar. 577		<i>Metarctia</i> 5		<i>mombasae</i> Btlr. Stug. 388	
<i>maximiana</i> Stgr. Euryph. 176		<i>metella</i> Dbl. & Hew. Nept. 199	48 c	<i>mombasae</i> Sm. Acr. 288	
<i>maximiana</i> Eur. 175		<i>methymna</i> Trim. Cup. 479 .	74 c	<i>mombasae</i> Sm. & Ky. Pent. 307	61 f
<i>mayottensis</i> Oberth. Nept. 199	48 c	<i>metis</i> L. Cycl. 551 . . .	77 k	<i>mombasae</i> Pent. 308	
<i>mazanguli</i> Neave Pseudal. 380	66 g	<i>metophis</i> Wallgr. Cup. 473 .	73 e	<i>monasi</i> Trim. Parn. 538	
<i>mazoensis</i> Trim. Desm. 419 .	70 a	<i>meza</i> Hew. Gastr. 558		<i>monitor</i> Rothsch. Char. 139	
<i>mechowi</i> Dew. Hypol. 214 . .	47 d	<i>mhondana</i> Suff. Acr. 281		<i>monochroa</i> Rbl. Geg. 540	
<i>mechowi</i> Rothsch. Char. 128 .	30 c	<i>mhondana</i> Suff. Eron. 62 .	21 d	<i>monochromus</i> Mab. Het. 550	
<i>mechowianus</i> Dew. Pap. 16 .	3 a	<i>micacea</i> Mab. Sar. 574		<i>montana</i> Btlr. Plan. 241 . .	58 d
<i>medea</i> Cr. Acr. 279 . . .	54 d	<i>micans</i> Aur. Euryph. 172		<i>monteiri</i> Stgr. Char. 131	
<i>medesaga</i> Suff. Pap. 24		<i>micans</i> Holl. Parn. 535 . .	78 g	<i>monteironis</i> Btlr. Acr. 249 .	57 d
<i>media</i> Ellr. Acr. 250 . . .	57 c	<i>micipsa</i> Trim. Parn. 538		<i>monteironis</i> Dre. Hypol. 214	47 b
<i>mediterraneae</i> B.-Bak. Cup.		<i>micra</i> Sm. Teriom. 328		<i>Monura</i> Mab. 128	
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<i>meditrina</i> Hew. Cel. 582 . .	76 a	<b>Micropentila</b> Aur. 339		<i>mopsus</i> Mab. Ypth. 114	
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<i>medon</i> Euph. 176		<i>micylus</i> Cr. Cup. 492 . . .	74 h	<i>morantii</i> Trim. Cren. 205 . .	48 g
<i>medontias</i> Hew. Gnoph. 85 .	26 e	<i>midas</i> Btlr. Cycl. 551 . . .	77 k	<i>morantii</i> Trim. Parosm. 546	77 i
<i>medusa</i> Cr. Lept. 31 . . .	10 a	<i>milca</i> Hew. Vancsulla 227 .	52 e	<i>moreelsi</i> Aur. Euryph. 174	
<i>megaesla</i> Stgr. Cym. 146		<i>mildbraedi</i> Schtz. Iol. 403 . .	70 h	<i>moreelsi</i> Aur. Pseuder. 322 .	63 d
<b>Megalopalpus</b> Rüb. 361		<i>mildbraedi</i> Schtz. Pseuder. 324		<i>morella</i> Joann. Parn. 536	
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<i>Megisba</i> 457		<i>miles</i> Btlr. Terac. 56		<i>moriqua</i> Wallgr. Cup. 469 .	73 d
<i>metaena</i> = melas Cup. 467		<i>millori</i> = millari 347		<i>moritili</i> Wallgr. Plat. 523 . .	79 a
<i>melaina</i> Ellr. Acr. 274 . . .	59 f	<i>millari</i> Aur. Hypol. 216		<i>morondavana</i> Sm. Pap. 20	
<i>melaleuca</i> Oberth. Hesp. 566		<i>millari</i> Trim. Del. 317 . . .	64 d	<i>morosa</i> Rog. Sar. 574	
<i>melambrota</i> Holl. Lyc. 453 .	72 c	<i>millari</i> Trim. Lyc. 442 . . .	71 f	<i>mosana</i> Suff. Acr. 281	
<i>metaena</i> = melas Cup. 467		<i>milnei</i> Hew. Diest. 167 . . .	37 f	<i>mossambicensis</i> Hpffr. Eron. 63	
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<i>melanoxantha</i> E.-St. Acr. 253		<i>mimeta</i> Karsch Deud. 366 .	65 h	<i>moyambina</i> B.-Bak. Pseuder.	
<i>melas</i> Oberth. Acr. 265		<i>mimetica</i> Aur. Stug. 388		320	
<i>melas</i> Trim. Cup. 467 . . .	73 b	<i>mimetica</i> Dre. Lyc. 439 . .	71 c, d	<i>mozambica</i> Barl. Spind. 413 .	69 c, f
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583		<i>minima</i> Holl. Gorg. 557 . .	77 c	<i>multipunctata</i> Lathy Pent. 307	
<i>melina</i> Thur. Plan. 246		<i>minima</i> Trim. Lyc. 443 . .	71 f	<i>mundula</i> Grünb. Diest. 160	
<i>Melinda</i> Mr. 72		<i>Miniodes</i> 6		<i>murcia</i> Plötz Pard. 530	
<i>melissa</i> Dre. Epit. 348		<i>minimum</i> Dre. Pseuder. 323 .	62 g	<i>murga</i> Mab. Pamphila 512	
<i>melphis</i> Holl. Parn. 535		<i>mintha</i> Geyer Lept. 107		<i>murina</i> Bart. Erg. 208	
<i>melusina</i> F. Myc. 90 . . .	27 d	<i>minusculus</i> Aur. Cup. 495		<i>mus</i> Suff. Epit. 358 . . .	65 a
<i>menamena</i> Mab. Hen. 102		<i>minusculus</i> Rbl. Acl. 555		<i>musa</i> Guér. Prec. 221	
<i>menas</i> Dre. Iol. 393 . . .	67 d	<i>mirabilis</i> Bart. Euph. 185		<i>musagetes</i> Holl. Lyc. 438 . .	72 a
<i>mendeche</i> Sm. Axioc. 421 . .	70 c	<i>mirabilis</i> Btlr. Acr. 266		<i>mutans</i> Btlr. Terac. 51 . .	16 d
<i>menelas</i> Dre. Spind. 413 . .	69 g	<i>mirabilis</i> Dre. Iol. 403		<i>mutata</i> Ellr. Acr. 249	
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<i>mengoensis</i> B.-Bak. Epit. 358		<i>miriam</i> Fldr. Terac. 53		<i>mylica</i> Guén. Cup. 495	
<i>meninx</i> Trim. Cycl. 552 . .	78 a	<i>mirifica</i> Holl. Euliph. 344 . .	65 c	<b>Mylothris</b> Hbn. 32	
<i>menippe</i> Drury Acr. 280 . .	54 b	<i>mirifica</i> Lathy Acr. 276		<i>Mylothris</i> 29, 30	
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<i>Nacaduba</i> <i>Mr.</i> 457, 470		neriene <i>Bsd.</i> Zer. 418 . . .	70 a	<i>niveus</i> <i>Dre.</i> Lachn. 364
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nairobiensis <i>E.-Sh.</i> Spind. 413		netopha <i>Hew.</i> Parn. 539 . . .	78 h	nobilis <i>Aur.</i> Myc. 87 . . . 27 b
namaqua <i>Trim.</i> Spind. 412 . . .	69 e	<i>Netrobalane</i> <i>Mab.</i> 570		nobilis <i>Dre.</i> Char. 133 . . . 32 c
<i>namaquana</i> <i>Ww.</i> Ab. 568		neumanni <i>E.-Sh.</i> Myl. 36		nobilis <i>Rog.</i> Pap. 16 . . . 4 c
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nana <i>Trim.</i> Hesp. 566 . . .	75 c	neumanni <i>Rothsch.</i> Dan. 73		nobilitata <i>Thur.</i> Prec. 219
<i>nandensis</i> <i>E.-Sh.</i> Acr. 249		neumanni <i>Rotseh.</i> Euph. 189		noblemairei <i>J.</i> Myc. 88
<i>nandensis</i> <i>Neave</i> Cup. 483		neumanni <i>R.</i> & <i>J.</i> Arg. 231		noctula <i>Dre.</i> Parn. 537
<i>nandianus</i> <i>B.-Bak.</i> Cup. 488		neumanni <i>Thur.</i> Pseudacr. 197		nodieri <i>Oberth.</i> Cup. 467
<i>nandina</i> <i>Ansorge</i> Myc. 96		neurata <i>Holl.</i> Mim. 315		nohara <i>Bsd.</i> Acr. 274 . . . 55 c
<i>nandina</i> <i>R.</i> & <i>J.</i> Pap. 18		<i>Neurellipes</i> <i>B.-Bak.</i> 435		nomenia <i>Hew.</i> Deud. 365 . . . 65 i
<i>nandina</i> <i>Rothsch.</i> Char. 131		<i>Neurosymploca</i> <i>Wall.</i> 5		nomion <i>Stgr.</i> Deud. 365 . . . 65 i
nanodes <i>Sm.</i> Gnoph. 85		<i>Neurypexina</i> <i>B.-Bak.</i> 435		noquasa <i>Trim.</i> Cup. 472 . . . 74 g
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narcissus <i>Bllr.</i> App. 37		nevillei <i>B.-Bak.</i> Cup. 482 . . .	74 e	normalis <i>Stgr.</i> Euph. 187 . . . 43 d
narcissus <i>Bllr.</i> Myl. 36		newtoni <i>E.-Sh.</i> Acr. 255		northcotti <i>Rothsch.</i> Char. 135
narcissus <i>F.</i> Hen. 102 . . .	28 c	ngaziya <i>Oberth.</i> Myl. 35 . . .	11 a, b	nossima <i>Ward</i> Amaur. 75 . . . 23 d
<i>narcissus</i> <i>Hen.</i> 97		nia <i>Strd.</i> Acr. 258		<i>nossima</i> Amaur. 124, 215
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narinda <i>Ward</i> Eurypt. 210		<i>niavius</i> Amaur. 215		nothus <i>F.</i> Cer. 526 . . . 78 i, 79 g
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<i>natalensis</i> <i>Bsd.</i> Cren. 206		nicobule <i>Holl.</i> Neptis 202		nottoana <i>Wallgr.</i> Eagr. 572 . . . 76 d
<i>natalensis</i> <i>Dbl.</i> & <i>Hew.</i> Spind. 413 . . .	69 e	nicodice <i>Grünb.</i> Nept. 202		<i>nouna</i> <i>Luc.</i> Terac. 58
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<i>natalensis</i> <i>Slgr.</i> Prec. 224 . . .	51 c	nidama <i>Suff.</i> Acr. 288		nubifer <i>Trim.</i> Cup. 462 . . . 72 i
<i>natalensis</i> <i>Trim.</i> Cup. 469 . . .	73 c	niger <i>Dre.</i> Oxyp. 553 . . .	77 e	nubifera <i>Dre.</i> Lipt. 331 . . . 63 g
<i>natalica</i> <i>Bsd.</i> Acr. 267 . . .	55 f	nigeriae <i>Aur.</i> Lyc. 452 . . .	72 b	nubila <i>Capr.</i> Pap. 20 . . . 4 a
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neavei <i>Aur.</i> Ab. 569		nigra <i>Holl.</i> Pseudal. 380		<i>numenes</i> <i>Hew.</i> Char. 132 . . . 31 c
neavei <i>B.-Bak.</i> Cup. 475		nigra <i>Suff.</i> Tel. 301		nupta <i>Bllr.</i> Lept. 31 . . . 10 b
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nebetho <i>Suff.</i> Cym. 144		nigricans <i>Aur.</i> Pier. 47		nyanza <i>Neave</i> Tel. 302
nebrodes <i>Hew.</i> Nept. 202		nigricans <i>Aur.</i> Terac. 51 . . .	16 c	<i>nyanzana</i> <i>Wichgr.</i> Stug. 388
nebulosa <i>Fldr.</i> Myc. 95 . . .	27 f	nigricans <i>Holl.</i> Plat. 523 . . .	79 b	nyassae <i>B.-Bak.</i> Cup. 481 . . . 74 d
nebulosa <i>Trim.</i> Sal. 217 . . .	50 b	nigroapicalis <i>Aur.</i> Acr. 256		nyasana <i>Bllr.</i> App. 38 . . . 22 a
necho <i>Plötz</i> Rhop. 509 . . .	75 h	<i>nigrocaudala</i> <i>Pag.</i> Lyc. 441		nyasana <i>Bllr.</i> Char. 129
necoda <i>Hew.</i> Acr. 258 . . .	56 e	nigrocilia <i>Lathy</i> Euph. 187 . . .	44 a	nyassae <i>Barl.</i> Pseudarg. 192 . . . 46 f
neglecta <i>Thur.</i> Myr. 95		nigropunctata <i>B.-Bak.</i> Lyc. 443	71 g	nyassae <i>Barl.</i> Melan. 83
<i>neglecta</i> <i>Trim.</i> Lyc. 444		nigropunctata <i>Lur.</i> Diest. 165	38 b	nyassae <i>Bllr.</i> Pap. 25
negus <i>Fldr.</i> Cup. 482 . . .	73 g	<i>nigropunctata</i> <i>Lur.</i> Diest. 165		nyassae <i>Bllr.</i> Spind. 413
neita <i>Wallgr.</i> Pseudon. 110		<i>nigropunctatus</i> <i>B.-Bak.</i> Cel. 581	76 a	nyassae <i>Hew.</i> Al. 299 . . . 61 c
nelsoni <i>Sm.</i> Plan. 243		nilotica <i>Aur.</i> Cup. 484		nyassae <i>Hew.</i> Parn. 539 . . . 78 h
neluska <i>Oberth.</i> Acr. 271 . . .	55 d	nilus <i>Hew.</i> Spind. 415		nyassae <i>Lanz</i> Herp. 31 . . . 10 b
Nemeobiinae 294		nina <i>Slgr.</i> Nept. 201		nyassana <i>Aur.</i> Pent. 307
nemetes <i>Hew.</i> Nept. 200 . . .	48 c	ninapo <i>Suff.</i> Acr. 264		nyassicola <i>Strd.</i> Acl. 555
neoba <i>Mab.</i> Parn. 536		niobe <i>Aur.</i> Pap. 13		nyassicola <i>Strd.</i> Acr. 275
neobula <i>Dbl.</i> & <i>Hew.</i> Acr. 285	53 f	niobe <i>E.-Sh.</i> Acr. 279		<i>Nyetemera</i> 5
neobule <i>Acr.</i> 282, 285		<i>niobe</i> Acr. 282		<i>Nyetemeridae</i> 5
<i>Neochrysops</i> <i>B.-Bak.</i> 458, 474		niobe <i>Trim.</i> Cup. 486		<i>nydia</i> <i>Plötz</i> Caen. 515
Neocoenrya <i>Bllr.</i> 110		nioboides <i>Aur.</i> Pap. 13		nyikanus <i>R.</i> & <i>J.</i> Pap. 17
<i>Neocoenrya</i> 109		nireus <i>L.</i> Pap. 19 . . .	5 a	<i>Nymphalidae</i> 121
neokoton <i>Dre.</i> Mim. 316 . . .	63 c	<i>nireus</i> Pap. 11		<i>Nymphalinae</i> 142
<i>Neolycaena</i> <i>Karsch</i> 459, 488		niso <i>L.</i> Geg. 540		<i>nyseus</i> <i>Guér.</i> Talic. 463
neonegus <i>B.-Bak.</i> Cup. 482 . . .	74 e	nitida <i>Aur.</i> Pier. 46		nysiades <i>Hew.</i> Nept. 200 . . . 48 e
neophron <i>Hpffr.</i> Euph. 182 . . .	45 c, d	nitida <i>Dre.</i> Epit. 356 . . .	64 h	<i>nysiades</i> Neptis 201
<i>Neopitheops</i> 457		nivaria <i>Ward</i> Euryph. 176 . . .	40 e	
Neptidinae 198		<i>nivaria</i> Eur. 175		
neptidina <i>Karsch</i> Pseudath. 156		niveata <i>Bllr.</i> Ypth. 115		
Neptidopsis <i>Aur.</i> 209		niveicornis <i>Plötz</i> Chondr. 513	78 g	
<i>Neptidopsis</i> 121		<i>niveicornis</i> Chondr. 512		
		niveostriga <i>Trim.</i> Ked. 543		
		niveovittata <i>Aur.</i> Euph. 187	44 b	

## O.

obeira *Hew.* Acr. 285 . . . 53 d  
 oberthüri *Aur.* Al. 300 . . . 62 a  
 oberthüri *Aur.* Hesp. 565

	Plat.		Plat.		Plat.
oberthüri <i>Bllr.</i> Acr. 262 . . .	56 c, d	opalescens <i>Bllr.</i> Terac. 53 . . .	16 f	pallida <i>Trim.</i> Teriom. 328	
oberthüri <i>Bllr.</i> Acr. 317		opalinus <i>Bllr.</i> Cel. 581		pallidepicta <i>Slrd.</i> Acr. 258	
oberthueri <i>Karsch</i> Catun. 192	46 d, e	<i>Ophideres</i> 6		palmus <i>Cr.</i> Phas. 430	
obliqua <i>Aur.</i> Plan. 243		ophidicephalus <i>Oberth.</i> Pap. 20	8 a	palocampta <i>Dre.</i> Parn. 536	
<i>Oboronia</i> <i>Karsch</i> 459, 492		<i>ophion</i> <i>Bsd.</i> Tag. 571		paludicola <i>Stoll</i> Cup. 496	
obscura <i>Aur.</i> Myc. 91 . . .	28 a	<i>ophion</i> <i>Dre.</i> Tag. 571		<i>Pamphila</i> <i>F.</i> 509	
obscura <i>Aur.</i> Spind. 413		<i>ophion</i> <i>Wall.</i> Eagr. 573		<b>Pamphilinae</b> 509	
obscura <i>B.-Bak.</i> Deud. 368		ophione <i>Cr.</i> Neptid. 209 . . .	49 d	pampolis <i>Dre.</i> Cup. 479	
obscura <i>Dre.</i> Lyc. 453 . . .	72 b	ophione <i>Neptid.</i> 246		pancalis <i>Jord.</i> Plan. 243	
obscura <i>Neave</i> Pseudacr. 195		<i>Ophiusa</i> 6		panda <i>Bsd.</i> Physe. 108 . . .	28 f
obscura <i>Pseudacr.</i> 240		ophiusa <i>Hew.</i> Hypol. 556 . . .	77 d	pandaensis <i>Joic. &amp; Talb.</i> Sar.	
obscura <i>Suff.</i> Acr. 268		ophthalmica <i>Mab.</i> Sar. 577		577	
obscura <i>Suff.</i> Hypol. 387		ophthalmicodes <i>Slrd.</i> Sar. 577		pandama <i>Wkr.</i> Cup. 497	
obscurata <i>Grünb.</i> Pseudarg. 192		opinatus <i>Her.</i> Char. 134		pandava <i>Horsf.</i> Catochr. 491	
obscurata <i>Trim.</i> Deud. 373		opis <i>Drury</i> Cyn. 192 . . .	46 e, f	pandora <i>Dre.</i> Asl. 343	
obscuratus <i>Suff.</i> Char. 140		oppidia <i>Hew.</i> Acr. 255 . . .	57 a	paneperata <i>Dre.</i> Iol. 394 . . .	67 e
obscurior <i>Stgr.</i> Catacr. 218		<i>Oraidium</i> <i>B.-Bak.</i> 459, 474		panganiensis <i>Thur.</i> Terac. 60	
obscurus <i>Aur.</i> Iol. 406		orbona <i>Geyer</i> Pier. 46		pansa <i>Hew.</i> Rhop. 508 . . .	75 e
obsolescens <i>B.-Bak.</i> Lyc. 452		oreas <i>Drury</i> Aphn. 408 . . .	69 c	paola <i>Plötz</i> Ked. 543 . . .	78 d
obsoleta <i>Grünb.</i> Diest. 163 . . .	39 a	oreas <i>Aphn.</i> 409		<i>paphia</i> <i>Argynn.</i> 231	
obtusa <i>R. &amp; G.</i> Nept. 200		oreas <i>E.-Sh.</i> Acr. 251 . . .	57 c	paphianus <i>Ward</i> Char. 139 . . .	32 a
obtusangula <i>Aur.</i> Diest. 160 . . .	39 d	oreas <i>Trim.</i> Phas. 431 . . .	70 i	<b>Papilio</b> <i>L.</i> 11	
obtusangula <i>Diest.</i> 161		orestia <i>Hew.</i> Acr. 256 . . .	56 g	<i>Papilio</i> 3	
obumbrata <i>Weym.</i> Pier. 43		<i>Orgyja</i> 5		<b>Papilionidae</b> 11	
ocale <i>Bsd.</i> Terac. 57 . . .	18 e	oribazus <i>Bsd.</i> Pap. 18 . . .	6 a	paradisea <i>Bllr.</i> Ab. 568 . . .	76 i
occidentalis <i>Aur.</i> Pseudacr. 196		orientalis <i>Aur.</i> Cycl. 551		paradoxa <i>Dre.</i> Pent. 311 . . .	63 c
occidentalis <i>Bart.</i> Ypth. 116		orientalis <i>B.-Bak.</i> Lipt. 331 . . .	63 f	paradoxa <i>Fldr.</i> Pseud. 30 . . .	10 a
occidentium <i>Aur.</i> Pent. 308	61 g	orientalis <i>Rothsch.</i> Euph. 190		paradoxa <i>Mab.</i> Hen. 104 . . .	28 e
occidentium <i>Mab.</i> Cren. 205	48 g	orientis <i>Aur.</i> Acr. 253 . . .	57 c	paradoxa <i>Neave</i> Euph. 189	
occidentis <i>Bllr.</i> Pier. 40		orientis <i>Aur.</i> Dan. 72		paradoxa <i>Schltz.</i> Spind. 416	
occulta <i>Trim.</i> Geg. 540		orientis <i>Karsch</i> Euryph. 177 . . .	40 d	paragea <i>Sm.</i> Plan. 246 . . .	59 c
ocellatus <i>Bllr.</i> Terac. 51 . . .	16 b, c	orina <i>Hew.</i> Acr. 256 . . .	57 a	paragora <i>Rbl.</i> Mim. 315	
ocelligera <i>Strd.</i> Myc. 91		orinata <i>Oberth.</i> Acr. 256		parallela <i>Aur.</i> Lyc. 450	
ochlea <i>Bsd.</i> Amaur. 75 . . .	21 a	orineta <i>Eltr.</i> Acr. 256		parallellopupillata <i>Karsch</i> Neoc.	
ochleides <i>Slgr.</i> Amaur. 75		orithya <i>L.</i> Prec. 226		113 . . . . .	29 a
ochracea <i>Aur.</i> Myl. 31 . . .	10 f	orithya <i>Precis</i> 121		parallellopupillata <i>Neoc.</i> 111	
ochracea <i>Bart.</i> Euryph. 157		orma <i>Plötz</i> Caen. 517 . . .	79 k	parapetreia <i>Rbl.</i> Pent. 308	
ochracea <i>Bllr.</i> Al. 299		ornatus <i>Mab.</i> Cup. 494		<i>Paraponlia</i> <i>Röb.</i> 330	
ochracea <i>Heron</i> Pier. 41		<i>Ornithoptera</i> 3		<b>Pararge</b> <i>Hbn.</i> 105	
ochracea <i>Lath.</i> Hen. 99 . . .	28 c	orphina <i>Karsch</i> Cym. 147		<i>Pararge</i> 3, 104	
ochracea <i>Neave</i> Nept. 203		<b>Ortholexis</b> <i>Karsch</i> 583		<i>Parasa</i> 5	
ochracea <i>Rothsch.</i> Char. 136 . . .	33 b	orthosia <i>Klug</i> Prec. 220		parasitanus <i>Rbl.</i> Iol. 395	
ochracea <i>Char.</i> 134		orthrus <i>Trim.</i> Phas. 428 . . .	70 e, f	parcus <i>Karsch</i> Pard. 531	
ochraceus <i>Aur.</i> Terac. 51 . . .	16 b	ortygia <i>Trim.</i> Cup. 479 . . .	73 f	pardalena <i>Dre.</i> Pent. 308 . . .	63 a, b
ochrascens <i>E.-Sh.</i> Acr. 265		o-rubrum <i>Holl.</i> Lipt. 337 . . .	64 a	<b>Pardaleodes</b> <i>Bllr.</i> 528	
ochrascens <i>Neave</i> Del. 347		orus <i>Dalm.</i> Heod. 498 . . .	71 i	<i>Pardaleodes</i> 5, 520, 553	
ochrea <i>Bart.</i> App. 37		osbecki <i>Aur.</i> Phas. 430		pardalina <i>Bllr.</i> Amp. 548	
ochreana <i>Lath.</i> Eagr. 573		oscari <i>Rothsch.</i> Acr. 282 . . .	60 d	<b>Pardopsis</b> <i>Trim.</i> 288	
ochreata <i>Eltr.</i> Acr. 262		oscari <i>Rothsch.</i> Pap. 14		<i>Pardopsis</i> 406	
ochreata <i>Grünb.</i> Acr. 287		oscarus <i>Thur.</i> Amaur. 76 . . .	24 d	<i>Pareronia</i> 61	
ochreata <i>Sm.</i> Cym. 147		osheba <i>Holl.</i> Pseuder. 324		parhassus <i>Drury</i> Sal. 217	
ochreopuncta <i>Aur.</i> Cup. 490		osiris <i>Hpfrr.</i> Cup. 484 . . .	73 h	paris <i>Trim.</i> Prec. 226	
octavia <i>Cr.</i> Prec. 224 . . .	51 b	<b>Osmodes</b> <i>Wts.</i> 544		parmeno <i>Dbl. &amp; Hew.</i> Gnoph.	
octobalia <i>Karsch</i> Acr. 250		<b>Osphantes</b> <i>Holl.</i> 546		83 . . . . .	26 b
octofenestrata <i>Saalm.</i> Parn. 538		otacilia <i>Trim.</i> Lyc. 443		<b>Parnara</b> <i>Mr.</i> 531	
octogramma <i>Sm. &amp; Ky.</i> Euryph.		othello <i>Suff.</i> Char. 139 . . .	31 d	<i>Parnara</i> 516, 548, 524	
181		otlauga <i>Sm.</i> Lipt. 338 . . .	62 i	<i>Parnassius</i> 246	
oculata <i>Sm. &amp; Ky.</i> 452 . . .	72 b	otraeda <i>Hew.</i> Deud. 368 . . .	66 a	paroechus <i>Mab.</i> Trap. 559 . . .	79 f
odana <i>Dre.</i> Deud. 373 . . .	68 a	ottonis <i>Aur.</i> Pap. 26		<b>Paronymus</b> <i>Aur.</i> 520	
odenatus <i>Ww.</i> Pap. 16		oxione <i>Hew.</i> Euryph. 172 . . .	41 c	<b>Parosmodes</b> <i>Holl.</i> 546	
odora <i>Erebus</i> 6		<b>Oxylides</b> <i>Hbn.</i> 380		<i>Parosmodes</i> 553	
odysseus <i>Stgr.</i> Char. 130 . . .	30 d	oxylus <i>Trim.</i> Lept. 107		parthasia <i>F.</i> Acr. 255 . . .	57 a, 59 c
<b>Oedaloneura</b> <i>Mab.</i> 557		<b>Oxypalpus</b> <i>Wts.</i> 553		parthoppidia <i>Stgr.</i> Acr. 255	
oemilius <i>Doun.</i> Cym. 145 . . .	34 a	<i>Oxypalpus</i> 546		parsimon <i>F.</i> Cup. 481	
oemilius <i>Cymoth.</i> 142				partita <i>Aur.</i> Euryph. 172 . . .	41 c
oenone <i>L.</i> Prec. 225				parva <i>Aur.</i> Amp. 548	
oenone <i>Precis</i> 121				parva <i>Bllr.</i> Hen. 101	
ogova <i>Plötz</i> Cym. 154 . . .	36 b			parva <i>Ky.</i> Tel. 302	
ogowena <i>Mab.</i> Osph. 546				parvidens <i>Mab.</i> Hen. 103	
ogrugana <i>Lath.</i> Parn. 539 . . .	79 c			parvipuncta <i>H.-Schäff.</i> Caen.	
ogwanyi <i>B.-Bak.</i> Cycl. 552				517	
ogygia <i>Trim.</i> Pier. 42				parvipunctis <i>Slrd.</i> Prec. 222	
olaus <i>Plötz</i> Acl. 555 . . .	77 b			passandava <i>Ward</i> Hen. 104	
oliva <i>Suff.</i> Euryph. 157				pasteon <i>Dre.</i> Deud. 371 . . .	66 b
olivacea <i>Grünb.</i> Euph. 189				pasleuri <i>Snell.</i> Neptis 199	
omphale <i>Godd.</i> Terac. 57 . . .	18 e			pato <i>Trim.</i> Sar. 577	
omphaloides <i>Bllr.</i> Terac. 58				patricius <i>Trim.</i> Cup. 482 . . .	73 i
omrora <i>Trim.</i> Acr. 278				<i>Patula</i> 6	
oncaea <i>Hpfrr.</i> Acr. 268 . . .	55 e			paucipunctata <i>B.-Bak.</i> Caen.	
onerata <i>Trim.</i> Acr. 273				516	
onidale <i>Suff.</i> Pap. 22				paucipunctata <i>Ky.</i> Pent. 308	61 f
oniensis <i>B.-Bak.</i> Epit. 356				paula <i>Hesp.</i> 566	
opaca <i>Ky.</i> Lipt. 332 . . .	63 g			paula <i>Stgr.</i> Nept. 201 . . .	48 f

## P.



	Plat.		Plat.		Plat.
<i>pauli</i> <i>Stgr.</i> Pent. 307		<i>phantasina</i> <i>Stgr.</i> Euryph. 176	41 a	<i>planemoides</i> <i>Trim.</i> Pap. 14	
<i>pauperata</i> <i>Thur.</i> Acr. 275		<i>phaola</i> <i>Dbl.</i> App. 37 . . .	11 d, e	<i>platydema</i> <i>R. &amp; J.</i> Hypol. 211	
<i>pauperula</i> <i>Strd.</i> Lyc. 410 . .	72 a	<i>pharis</i> <i>Bsd.</i> Eron. 62 . . .	21 c	<b>Platylesches</b> <i>Holl.</i> 522	
<i>pavonis</i> <i>Bllr.</i> Myc. 92		<i>Pharmacophagus</i> 3		<i>platyptera</i> <i>R. &amp; J.</i> Neptid. 209	49 d
<i>pechueli</i> <i>Dew.</i> Cren. 201		<i>pharsa</i> <i>Fruhst.</i> Pseudacr. 191		<i>platyrantha</i> <i>Jord.</i> Plan. 245	
<i>peculiaris</i> <i>Lathy</i> Char. 129		<i>pharsaloides</i> <i>Holl.</i> Acr. 258		<i>plautilla</i> <i>Hew.</i> Euryph. 158	36 d
<i>peculiaris</i> <i>Lathy</i> Euph. 183		<i>pharsalus</i> <i>Ward</i> Acr. 258 . .	56 d	<i>plautilla</i> Euryph. 157	
<i>peculiaris</i> <i>Neave</i> Pap. 15		<b>Phasis</b> <i>Hbn.</i> 424		<i>plebejus</i> <i>Bllr.</i> Cup. 481 . . .	71 a
<i>peculiaris</i> <i>Rog.</i> Cup. 475 . .	74 c	<i>Phasis</i> 297		<i>plejone</i> <i>Klug</i> Terac. 53	
<i>peeli</i> <i>Dixey</i> Pier. 41		<i>phasma</i> <i>Bllr.</i> Cup. 481		<i>plerotica</i> <i>Karsch</i> Ab. 569	
<i>peitho</i> <i>Plötz</i> Hen. 99 . . .	28 a	<i>Phassus</i> 6		<i>pterolica</i> <i>Abantis</i> 584	
<i>pelarga</i> <i>F.</i> Prec. 223		<i>phegea</i> <i>F.</i> Elymn. 82 . . .	26 a	<i>plicata</i> <i>Bllr.</i> Eagr. 572	
<i>pelargoides</i> <i>Aur.</i> Prec. 222		<i>pheusaca</i> <i>Suff.</i> Acr. 279		<i>plinius</i> <i>F.</i> Cup. 470	
<i>pelasgis</i> <i>Godl.</i> Prec. 221 . .	52 a	<i>phidia</i> <i>Hew.</i> Pent. 309		<i>plistonax</i> <i>Hew.</i> Euryph. 177 .	40 c
<i>pelasgius</i> <i>Sm.</i> Acr. 255		<i>phidias</i> <i>F.</i> Leptom. 422 . .	70 b	<i>plistonius</i> <i>Plötz</i> Sar. 577 . .	76 g
<i>pelias</i> <i>Cr.</i> Char. 127 . . .	30 b	<i>phidyale</i> <i>Wkr.</i> Cycl. 552		<i>ploetzi</i> <i>Aur.</i> Hesp. 563	
<i>pelias</i> <i>Charaxes</i> 123, 135		<i>philander</i> <i>Hpffr.</i> Andr. 522 .	79 h	<i>plötzi</i> <i>Barl.</i> Myc. 90	
<i>pelodurus</i> <i>Bllr.</i> Pap. 17 . .	4 b	<i>phileris</i> <i>Bsd.</i> Myl. 35 . . .	11 b	<i>plötzi</i> <i>Mab.</i> Acl. 555 . . .	77 a
<i>pelopeia</i> <i>Stgr.</i> Acr. 254		<i>philiberti</i> <i>Joann.</i> Atell. 230		<i>plötzi</i> <i>Philosamia</i> 6	
<i>pelopidas</i> <i>Oberth.</i> Pap. 22		<i>philippsi</i> <i>Bllr.</i> Terac. 60 . .	20 b	<i>plötzi</i> <i>Swb.</i> Cel. 582	
<i>pelotus</i> <i>Karsch</i> Cup. 462		<i>philippus</i> <i>F.</i> Hypol. 384 . .	67 a	<b>Ploetzia</b> <i>Saalm.</i> 511	
<i>pemptolipus</i> <i>Aur.</i> Pap. 14		<i>philonoë</i> <i>Ward</i> Pap. 24 . .	7 a	<i>ploetzi</i> <i>Strd.</i> Caen. 516	
<i>peneleos</i> <i>Ward</i> Acr. 255 . .	57 b	<i>Philosamia</i> 6		<i>plurilimbatus</i> <i>Karsch</i> Cup. 493	
<i>penelope</i> <i>Acr.</i> 254		<i>philotimus</i> <i>Plötz</i> Sar. 577		<i>pluripupillata</i> <i>Strd.</i> Ypth. 116	
<i>penella</i> <i>Ellr.</i> Acr. 254		<i>phisadia</i> <i>Godl.</i> Terac. 51		<i>pluto</i> <i>Ward</i> Eupt. 155	
<i>penelope</i> <i>Stgr.</i> Acr. 254 . .	57 b	<i>phlacas</i> <i>Chrysophanus</i> 3		<i>plutonica</i> <i>Bllr.</i> Pseudath. 156	
<i>penricei</i> <i>Rothsch.</i> Char. 129		<i>phleas</i> <i>Heodes</i> 497		<i>podora</i> <i>Plötz</i> Caen. 515	
<i>penricei</i> <i>R. &amp; J.</i> Cren. 205		<i>phlegetonia</i> <i>Bsd.</i> Terac. 59 .	19 h, 20 a	<i>poggei</i> <i>Dew.</i> Cup. 462 . . .	72 k
<i>pentapolis</i> <i>Ward</i> Acr. 257 .	56 e	<i>phlegyas</i> <i>Bllr.</i> Terac. 54 . .	17 a	<i>poggei</i> <i>Dew.</i> Plan. 243	
<b>Pentila</b> <i>Ww.</i> 303		<i>Phlyaria</i> <i>Karsch</i> 457, 459		<i>poggei</i> <i>Planema</i> 197	
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salambo <i>Sm.</i> Acr. 259 . . . . .	56 d
Salamis <i>Bsd.</i> 216	
salmacis <i>Drury</i> Hypol. 214 . . . . .	47 b
salupha <i>Suff.</i> Acr. 258	
salvini <i>Btlr.</i> Plan. 241	
sambavae <i>Ward</i> Acr. 257	
samborana <i>Sm.</i> Tag. 571	
sambulos <i>Hew.</i> Myc. 89 . . . . .	27 c
sanaos <i>Myc.</i> 96	
sancti-thomae <i>E.-Sh.</i> Cup. 491	
sandace <i>Hew.</i> Myc. 89 . . . . .	27 d
sandaster <i>Trim.</i> Hesp. 565 . . . . .	75 c
sangaris <i>Godt.</i> Cym. 153	
sangaris <i>Cym.</i> 154	
sanguigutta <i>Mab.</i> Cup. 487 . . . . .	73 k
sanguinea <i>B.-Bak.</i> Lyc. 441 . . . . .	71 h
sanguinea <i>Plötz</i> Tel. 302 . . . . .	61 d
sanguinea <i>Tel.</i> 72	
saphirina <i>Karsch</i> Diest. 166 . . . . .	37 f
sapphira <i>Aster.</i> 204	
sapphirinus <i>Aur.</i> Iol. 398 . . . . .	68 e
sappirus <i>Dre.</i> Iol. 398 . . . . .	68 d
Sarangesa <i>Mr.</i> 573	
sarcoptera <i>Btlr.</i> Euph. 186	
sardonys <i>Trim.</i> Phas. 429	
sareplensis <i>Stgr.</i> Colias 65	
Saribia <i>Btlr.</i> 295	
sarita <i>E.-Sh.</i> Euph. 189 . . . . .	44 c
sarita <i>Euph.</i> 187	
sartina <i>Jord.</i> Plan. 244	
sataspes <i>Trim.</i> Hesp. 566 . . . . .	75 c
satis <i>Ward</i> Acr. 281 . . . . .	54 a
sator <i>Dbl. &amp; Hew.</i> Pard. 530 . . . . .	79 d
Saturnia 6	
Sartunidae 6	
saturnus <i>Btlr.</i> Char. 127 . . . . .	30 b
sarturnus <i>Char.</i> 129, 135	
Satyridae 81	
Satyrus <i>Labr.</i> 4, 105	

	Plat.
sauberi <i>Schlz.</i> Lipt. 338 . . . . .	65 c
saussurei <i>Dew.</i> Myc. 96 . . . . .	27 g
saxicola <i>Neave</i> Parn. 539	
scalaris <i>Grünb.</i> Pard. 529	
scalivittata <i>Btlr.</i> Plan. 242 . . . . .	58 d
schaeneia <i>Trim.</i> Ant. 228 . . . . .	52 d
schecana <i>R. &amp; J.</i> Acr. 248	
schuberti <i>Suff.</i> Terac. 61 . . . . .	15 d
schubotzi <i>Grünb.</i> Plan. 245	
schubotzi <i>Schlz.</i> Mim. 318 . . . . .	62 d
schultzei <i>Aur.</i> Deud. 368 . . . . .	65 k
schultzei <i>Aur.</i> Diest. 165 . . . . .	37 e
schultzei <i>Diestog.</i> 168	
schultzei <i>Aur.</i> Iol. 394 . . . . .	67 e
schultzei <i>Aur.</i> Pap. 12	
schultzei <i>Grünb.</i> Pseudon. 110	
schulzi <i>Plötz</i> Zoph. 512 . . . . .	79 b
schumannii <i>Suff.</i> Myl. 33	
sciaphilus <i>Schtz.</i> Iol. 398 . . . . .	68 c
sciathis <i>Hew.</i> Myc. 86 . . . . .	27 a
scintilla <i>Mab.</i> Cup. 487 . . . . .	73 i
scintillans <i>Aur.</i> Hypol. 383	
scintillans <i>Aur.</i> Iol. 400 . . . . .	68 e
scintillula <i>Holl.</i> Lyc. 456 . . . . .	72 g
Scolitanlides 473	
sebagadis <i>Guér.</i> Cup. 488	
sebetus <i>Hew.</i> Myc. 85	
secessa <i>Trim.</i> Hesp. 564	
secessa = trimeni <i>Hesp.</i> 564	
seclrayersi <i>Aur.</i> Euryph. 171	
seclrayersi <i>Aur.</i> Nept. 200 . . . . .	48 d
scineri <i>Strd.</i> Sar. 578	
seineri <i>Strd.</i> Terac. 58	
seis <i>Feisth.</i> Acr. 285	
scitzi <i>Röb.</i> Pier. 49	
sejuncta <i>Mab. &amp; Vuill.</i> Rhop. 509 . . . . .	75 f
selousi <i>Trim.</i> Myc. 93	
Semalea <i>Holl.</i> 517	
semialba <i>Aur.</i> Pier. 44 . . . . .	15 b
semialba <i>Mab.</i> Sar. 578	
semialbesens <i>Oberth.</i> Acr. 250	
semicoeca <i>Strd.</i> Myc. 93	
semiflava <i>Aur.</i> Eron. 62	
semipunctella <i>Strd.</i> Acr. 253	
semire <i>Cr.</i> Pseudacr. 194 . . . . .	46 a
semirufa <i>Sm.</i> Pseuder. 325	
semirufa <i>Pseuder.</i> 320	
semirufa <i>Sm. &amp; Ky.</i> Tel. 301 . . . . .	61 d
semivitra <i>Aur.</i> Acr. 253 . . . . .	57 b
semitypica <i>Aur.</i> Prec. 221	
semlikensis <i>Joic. &amp; Talb.</i> Cer. 526	
seneca <i>Ky.</i> Cym. 153	
senegalensis <i>Bsd.</i> Terias 64 . . . . .	22 c
senegalensis <i>H.-Schäff.</i> Euryph. 177 . . . . .	40 d
senegalensis <i>Klug</i> Parn. 535	
scipia <i>Eltr.</i> Acr. 255	
septemocellata <i>Strd.</i> Ypth. 115	
septistrigata <i>B.-Bak.</i> Lipt. 335	
serena <i>Ky.</i> Citr. 326 . . . . .	62 h
seriata <i>R. &amp; J.</i> Byb. 208	
seriata <i>Rothsch.</i> Char. 136	
scrula <i>Mab.</i> Cup. 496	
servona <i>Godt.</i> Acr. 253 . . . . .	57 b
sesamus <i>Trim.</i> Prec. 224 . . . . .	51 c
severina <i>Cr.</i> Pier. 40 . . . . .	13 b
severini <i>Aur.</i> Euryph. 174	
sextilis <i>Plötz</i> Caen. 517 . . . . .	79 k
sextilla <i>Mab.</i> Nept. 201	
sganzini <i>Bsd.</i> Acr. 258 . . . . .	56 e
sharpei <i>Aur.</i> Terac. 60 . . . . .	20 c
sharpei <i>B.-Bak.</i> Myr. 378 . . . . .	66 f
sharpiae <i>Btlr.</i> Cup. 473	
Sheffieldia <i>Ham.</i> Dre. 303	
Sheffieldia 298	
shelleyi <i>E.-Sh.</i> Art. 519	
siabona <i>Suff.</i> Acr. 264	
sibella <i>Dre.</i> Iol. 401 . . . . .	68 g
sibyllina <i>Stgr.</i> Pseudath. 156	49 e
sichela <i>Wallgr.</i> Cup. 471 . . . . .	73 d
sidamona <i>R. &amp; J.</i> Acr. 281	

	Plat.
sidus <i>Trim.</i> Iol. 402 . . . . .	68 h
sierrae <i>Holl.</i> Xanth. 528 . . . . .	79 f
sigia <i>Mab.</i> Terac. 56	
sigiensis <i>Strd.</i> Pent. 307	
siginna <i>Suff.</i> Acr. 284 . . . . .	51 a
sigirrensis <i>Strd.</i> Pier. 40	
sikorana <i>Rog.</i> Catun. 192 . . . . .	46 d
silacea <i>Eltr.</i> Acr. 249	
silanus <i>Sm.</i> Iol. 402 . . . . .	68 h
silarus <i>Dre.</i> Iol. 396	
silas <i>Ww.</i> Iol. 396 . . . . .	67 d, g
silenus <i>F.</i> Myr. 378 . . . . .	68 a
silia <i>Mab.</i> Acr. 257 . . . . .	56 g
simana <i>Upfgr.</i> Pier. 46	
simia <i>Wallgr.</i> Prec. 224 . . . . .	51 b
similis <i>Aur.</i> Hewit. 360	
similis <i>Cr.</i> Pap. 22	
similis <i>Ky.</i> Citr. 326 . . . . .	62 h
similis <i>Ky.</i> Lipt. 337 . . . . .	63 k
similis <i>Ky.</i> Megal. 362	
similis <i>Lathy</i> Myl. 34 . . . . .	22 a
simoni <i>Aur.</i> Pap. 23	
simonsii <i>Btlr.</i> Hen. 98 . . . . .	28 d
simplex <i>Aur.</i> Lipt. 339 . . . . .	64 a
simplex <i>Btlr.</i> Terac. 57 . . . . .	15 f
simplex <i>Röb.</i> Megal. 362 . . . . .	62 h
simplex <i>Schtz.</i> Deud. 367	
simplex <i>Stgr.</i> Diest. 164 . . . . .	38 c, f
simplex <i>Trim.</i> Phas. 427	
simplicia <i>Btlr.</i> Ypth. 115	
simplicia <i>Mschlr.</i> Lipt. 332	
simpliciocellata <i>Strd.</i> Ypth. 115 . . . . .	29 d
simulator <i>Btlr.</i> Pseudacr. 196	46 d
sinalata <i>Suff.</i> Eron. 62 . . . . .	15 c
sinapis <i>Leucophasia</i> 198	
sinis <i>Mab.</i> Parn. 537 . . . . .	78 g
sinuata <i>Plötz</i> Prec. 222 . . . . .	51 c
sipylus <i>Swk.</i> Terac. 59 . . . . .	19 f
sirene <i>Stgr.</i> Eupt. 154	
sisenna <i>Mab.</i> Pap. 25 . . . . .	8 c, 9 a
sjöstedti <i>Aur.</i> Euliph. 344	
sjöstedti <i>Aur.</i> Pap. 15	
sjöstedti <i>Aur.</i> Myl. 33 . . . . .	11 a
skoptoles <i>Dre.</i> Mim. 316	
skotios <i>Dre.</i> Cup. 480	
smaragdalis <i>Btlr.</i> Char. 131	
smaragdiferia <i>Btlr.</i> Arg. 232 . . . . .	52 e
Smerina <i>Hew.</i> 229	
Smerina 121	
smithi <i>Mab.</i> Lyc. 443 . . . . .	71 g
smithi <i>Mab.</i> Myl. 35 . . . . .	12 b
smithi <i>Mab.</i> Tag. 571	
smithi <i>Mab.</i> Ypth. 114	
soalalicus <i>Karsch</i> Cup. 469	
socotrana <i>Btlr.</i> Myc. 95	
socotrana <i>Rbl.</i> Acr. 285	
socotranus <i>Grant</i> Cup. 470	
solilucis <i>Btlr.</i> Pier. 44 . . . . .	14 a
solwezii <i>B.-Bak.</i> Cup. 481 . . . . .	74 d
somalicus <i>Rothsch.</i> Char. 126	
somalina <i>Btlr.</i> Spind. 413 . . . . .	69 e
sophia <i>F.</i> Prec. 225 . . . . .	51 b
sophrosyne <i>Plötz</i> Myc. 90	
sophus <i>F.</i> Euryph. 174 . . . . .	41 b
sorhageni <i>Dew.</i> Zcr. 419 . . . . .	70 a
soritia <i>Hew.</i> Caen. 515 . . . . .	80 a
sosia <i>Mab.</i> Rhabd. 546	
sosia <i>R. &amp; J.</i> Pap. 19	
sotikensis <i>E.-Sh.</i> Acr. 264 . . . . .	56 a
sotikensis <i>Acr.</i> 316	
Spalgis <i>Mr.</i> 433	
Spalgis 457	
sparsus <i>Dre.</i> Acl. 555 . . . . .	77 b
spatiosa <i>Mab.</i> Euph. 183 . . . . .	45 c
spatiosa <i>Euph.</i> 176	
speciosa <i>Wichgr.</i> Acr. 276	
Sphingidae 6	
spica <i>Mschlr.</i> Myl. 33 . . . . .	10 d
spilleri <i>Spitt.</i> Pier. 46 . . . . .	14 c
Spindasis <i>Wallgr.</i> 410	
spindasoides <i>Aur.</i> Spind. 415	
spio <i>L.</i> Hesp. 565 . . . . .	75 c



	Plat.		Plat.		Plat.
<i>spio</i> Plötz Hesp. 563		sulfurea Aur. Myl. 33 . . .	10 f	<i>Teracolus</i> 2, 3, 29	
<i>splendens</i> Mab. Padr. 531		sulfureus Aur. Terac. 55 . .	17 e	teratia Karsch Hen. 98 . .	28 c
<i>spuma</i> Dre. Lar. 329 . . .	63 f	sulphurea Aur. Eron. 62		<b>Teratoneura</b> Dudg. 344	
<i>stactalla</i> Karsch Cup. 460 .	72 h	sulphurcotincta Strd. Myl. 35		terea Drury Prec. 220 . . .	51 f
<i>statira</i> Mab. Parn. 539 . .	78 h	sulphurescens Aur. Acr. 254		tereoides Bllr. Prec. 221	
<i>statirides</i> Holt. Parn. 539 .	78 i	sulphurosus Thur. Terac. 56		<i>tergeminus</i> Hew. Cel. 581	
<i>staudingeri</i> Aur. Cym. 150		superba Aur. Cym. 149		<b>Terias</b> Swms. 64	
<i>staudingeri</i> Aur. Euryph. 178	40 b	superbus Schltz. Char. 133		<i>Terias</i> 63	
<i>staudingeri</i> Dew. Prec. 221		supponina Stgr. Acr. 264 . .	56 b	<b>Teriomima</b> Ky. 327	
<i>staudingeri</i> Holt. Osm. 545 .	77 g	suquala Pag. Lyc. 443		<i>Teriomima</i> 64, 325	
<i>staudingeri</i> Ky. Epit. 353 .	65 d	swaynei Bllr. Myl. 36		<i>Termoniphos</i> Karsch 459	
<i>staudingeri</i> Sm. & Ky. Lyc.		swinhoei Bllr. Terac. 58 . .	19 e	terpsichore L. Acr. 264 . .	56 a
453 . . . . .	72 c	sybaris Hpffr. Cup. 465 . .	73 a	terpsichore Acr. 266	
<i>stavelia</i> Suff. Plan. 240 . .	59 a	sykesi E.-Sh. Acr. 269		terra Neave Pseudacr. 195	
<i>steckeri</i> Kheit Amaur. 76		sylpha Ky. Pent. 311 . . .	61 i	terra Pseudacraea 240	
<i>stellatus</i> Mab. Het. 550 . .	78 a	sylphida Stgr. Pent. 311 . .	61 i	tessmanni Grünb. Euryph. 180	
<i>stellatus</i> Trim. Cup. 495 . .	74 i	sylvander Sm. Pier. 42 . .	22 a, b	tessmanni Grünb. Pseuder. 323	63 e
<i>stenobea</i> Wallgr. Acr. 271		sylvanus Drury Lyc. 442 . .	74 f	tessmanniana Strd. Cer. 527	
<i>stictica</i> R. & J. Amaur. 75		<i>sylvia</i> Aur. App. 36		tethys Rüb. Terac. 53	
<i>Stictonaclia</i> 5		symphona B.-Bak. Euph. 185		<i>Tetrarhanis</i> Karsch 330	
<i>stöhri</i> Karsch Caen. 516 . .	80 b	<i>Synechloë</i> Hbn. 39		tetrastigma Mab. Trich. 579	
<i>stormsi</i> Robbe Cup. 475 . .	71 b	synchrematizus B.-Bak. Cup. 481	74 d	tettensis Hpffr. Ab. 568 . .	75 a
<i>strabo</i> F. Catochr. 490		<i>synestalmenus</i> Karsch Sar. 577		thalassina Bsd. Eron. 62 . .	15 c, 21 e
<i>straminea</i> Aur. Herp. 31 . .	22 g	<i>Syptarucus</i> Bllr. 458		<i>Thaleropsis</i> Stgr. 212	
<i>strato</i> Mab. Hen. 100		<i>Syntomidae</i> 5		thauma Stgr. Euryphaedra 158	50 a
<i>strattipocles</i> Oberth. Acr. 257	56 f	syrinx Trim. Cycl. 552 . .	78 a	thauruma Reak. Catops. 63 .	21 a
<i>striata</i> Aur. Myl. 36		<i>syrtinus</i> Bllr. Terac. 60		<i>theane</i> Aster. 204	
<i>striata</i> Aur. Prec. 222				<i>thebana</i> Stgr. Cup. 469	
<i>striata</i> Bllr. Pseudacr. 195 .	46 d			thecla Plötz Sar. 578 . . .	76 f
<i>strigata</i> Aur. Nept. 201 . .	48 e			theclides Holt. Sar. 578 . .	76 f
<i>strigatus</i> Aur. Cup. 490				thelestis Oberth. Acr. 257 . .	56 f
<i>strigula</i> Mab. Hen. 100 . .	28 b			themis Hbn. Euph. 186 . . .	43 c
<b>Stugeta</b> Dre. 387				theobene Dbl. & Hew. Cym. 144	34 d
<i>stygia</i> Aur. Prec. 220 . . .	52 b			theocranta Karsch Cym. 146	
<i>styx</i> Rbl. Axioe. 420				theodosia Stgr. Cym. 146 . .	36 a
<i>subalbicans</i> B.-Bak. Sar. 579				<i>theodota</i> Hew. Cym. 145	
<i>subalbida</i> Holt. Sar. 578 . .	76 h			theognis Hew. Euryph. 177 .	40 c
<i>subapicalis</i> Aur. Myc. 94				theogone Bsd. Terac. 58 . .	19 a
<i>subaurea</i> Sm. Spind. 415 . .	69 g			theophane Hpffr. Ater. 191 .	48 a, b
<i>subbipupillata</i> Strd. Prec. 226				theophrastus F. Cup. 466	
<i>subditus</i> Sm. Cup. 473				theora Dbl. Pier. 43 . . .	13 e
<i>subeida</i> Fldr. Pier. 42 . . .	13 c			theorini Aur. Pap. 22 . . .	3 d
<i>subepiclea</i> Strd. Prec. 226				theorini Aur. Pseudacr. 195	
<i>subfacata</i> Mab. Gorg. 557 .	77 b			thero L. Phas. 425 . . . . .	70 d, e
<i>subfasciatus</i> Swms. Terac. 60 .	20 f			thersander F. Pap. 17 . . .	6 c
<i>subflavida</i> Holl. Gorg. 557 .	77 b			<i>thersander</i> Mab. Paron. 520	
<i>subfulva</i> Eltr. Acr. 249				thersandroides Aur. Pap. 17	
<i>subinfuscata</i> Grünb. Stug. 388	67 c			thespis L. Cup. 165 . . . .	73 a
<i>sublineata</i> Lathy Cyr. 203				thesprio Oberth. Acr. 279 . .	54 e
<i>sublurida</i> Fruhsl. Cym. 147				theuszi Dew. Pier. 44 . . .	14 a
<i>sublustris</i> B.-Bak. Epit. 358				thielei Strd. Timoc. (Eagr.) 584	
<i>submacula</i> Lathy Lipt. 332 .	62 a			thinaga Suff. Myl. 35	
<i>submaevius</i> Strd. Hen. 97				thomasius Stgr. Char. 138	
<i>subnilens</i> B.-Bak. Lyc. 453				thomensis Aur. Hypol. 214	
<i>subnotatus</i> Holt. Plat. 524 .	79 c			thops Holt. Osm. 545 . . . .	77 h
<i>subocellata</i> Bart. Gnoph. 85 .	26 c			thora Plötz Osm. 545 . . . .	77 f
<i>subocellata</i> Strd. Ypth. 116				<i>thore</i> Brenthis 231	
<i>subochracea</i> Holt. Parn. 533 .	78 f			thruppi Bllr. Terac. 58 . . .	19 b, c
<i>subochreate</i> Grünb. Acr. 253				thuraui Karsch Pap. 19	
<i>subolivescens</i> Holt. Trich. 579	76 h			<i>thuraui</i> Suff. Iolaus 403	
<i>subornata</i> Lathy Myr. 378 . .	66 f			<i>Thymaridae</i> 5	
<i>subpallidus</i> B.-Bak. Cup. 483	74 e			thyra L. Phas. 427 . . . . .	70 g
<i>subpunctata</i> B.-Bak. Lipt. 335				<i>Thyreles</i> 5	
<i>subpunctata</i> Ky. Teriom. 327	62 h			thysa Hpffr. Pier. 43 . . . .	13 e, 14 a
<i>subserena</i> Sm. Acr. 264				<i>Thysania</i> 6	
<i>subsimilis</i> Bllr. Hen. 101				thysbe L. Phas. 430 . . . .	70 h
<i>subsquamia</i> Thur. Acr. 283				thyrsis Ky. Lyc. 439 . . . .	71 d
<i>substrigatus</i> Holt. Acl. 555 .	77 a			thysi Capr. Char. 134 . . .	33 c
<i>subtentyris</i> Strd. Euryph. 172				<i>tia</i> Suff. Euryph. 174	
<i>subtriocellata</i> Strd. Prec. 226				tiberius Sm. Eux. 123	
<i>subundularis</i> Stgr. Lipt. 334	63 h			tibullus Ky. Pap. 13 . . . .	2 a
<i>subvariegata</i> Sm. & Ky. Lipt.				<b>Timæconia</b> Strd. 584	
336 . . . . .	62 e			timon F. Iol. 391 . . . . .	67 d
<i>subvariegata</i> Lipt. 337				tintingia Bsd. Spalg. 433	
<i>sucepha</i> Suff. Acr. 279				<i>tippelskirehi</i> Suff. Pap. 17	
<i>sudanica</i> Aur. Lachn. 364				tirica Eltr. Acr. 250	
<i>sudanicus</i> Aur. Iol. 407				tiridates Cr. Char. 132 . . .	31 b
<i>sudanicus</i> Aur. Terac. 52				<i>tiridates</i> Char. 134, 137	
<i>sufferti</i> Aur. Ypth. 114				tirikensis Neave Myl. 34	
<i>suffusa</i> Eltr. Acr. 249				<i>tirikensis</i> Neave Pseudacr. 196	
<i>suffusa</i> R. & J. Prec. 225				<i>Tirumala</i> Mr. 72	
<i>Sukidion</i> Dre. 393				tirza Hew. Pent. 311	
<i>sulfuratus</i> Karsch Terac. 61 .	20 f, g			tisamena Holt. Lyc. 444 . . .	71 h

## T.



	Plat.		Plat.		Plat.
<i>litanota</i> Karsch Hypol. 556		<i>tulliana</i> Sm. Lipt. 337 . . .	65 b	<i>Vanessula</i> 121	
<i>togara</i> Plötz Cup. 492 . . .	74 h	<i>tumentia</i> Drc. Epit. 354 . . .	64 g	<i>varanes</i> Cr. Char. 139	
<i>togoensis</i> Bart. Pseudacr. 196		<i>Tumerepes</i> B.-Bak. 347		<i>varia</i> Trim. Eron. 62	
<i>togoensis</i> Suff. Euryph. 156		<i>turbata</i> Btlr. Hen. 101		<i>varians</i> Oberth. Trap. 559	
<i>toka</i> Strd. Acr. 265		<i>turbata</i> Ky. Lipt. 337 . . .	63 k	<i>variegata</i> Aur. Euph. 184 . . .	45 a
<i>tolosa</i> Plötz Myc. 95		<i>turbata</i> Sm. & Ky. Lyc. 454		<i>variegata</i> Sm. Pseuder. 321 . . .	62 f
<i>lolosa</i> Myc. 88		<i>turna</i> Mab. Acr. 276		<i>variegata</i> Pseuder. 322	
<i>tophia</i> Wallgr. Terac. 60 . . .	20 d	<i>tynderaeus</i> F. Pap. 22 . . .	7 a	<i>variegatus</i> B.-Bak. Cup. 482 . . .	74 c
<i>torensis</i> B.-Bak. Pard. 530				<i>vashiti</i> Btlr. Amaur. 73 . . .	23 d
<i>torrida</i> Ky. Pent. 310 . . .	61 h			<i>velleda</i> Mab. Neptid. 209 . . .	49 d
<i>lorrida</i> Terac. 54				<i>velox</i> Grant Char. 135	
<i>toruna</i> Sm. Acr. 250				<i>venata</i> Btlr. Pier. 47	
<i>touhilimasa</i> Vuill. Prec. 219				<i>vendita</i> Grünb. Plan. 213	
<i>trajanus</i> Ward Eux. 123 . . .	29 f			<i>venosa</i> Trim. Ab. 569 . . .	75 a
<i>transienda</i> Strd. Acr. 253				<i>venosus</i> Stgr. Terac. 52 . . .	16 d
<i>transiens</i> Bart. Myc. 85				<i>ventura</i> Hew. Acr. 265 . . .	55 a
<i>transiens</i> Suff. Dan. 72				<i>ventura</i> Acr. 266	
<i>transita</i> Eltr. Acr. 256				<i>venturina</i> Thur. Acr. 265	
<i>translucida</i> Eltr. Acr. 254 . . .	60 e			<i>venus</i> Leto 6	
<i>transvaaliae</i> Trim. Hesp. 564				<i>venustus</i> Btlr. Terac. 51 . . .	15 e
<i>transvaaliae</i> Oberth. Hesp. 565				<i>veronica</i> Cr. Diest. 164 . . .	38 b
<i>transvaalica</i> Hesp. 566				<i>veronica</i> Diest. 165	
<i>transverstigma</i> Drc. Tel. 302 . . .	63 a			<i>versatilis</i> B.-Bak. Lyc. 452 . . .	71 k
<b>Trapezites</b> Hbn. 559				<i>verulana</i> Ward Eron. 62	
<i>Trapezites</i> 558				<i>vesperalis</i> Sm. Acr. 257 . . .	56 f
<i>triangularis</i> Aur. Micr. 340 . . .	64 b			<i>vesta</i> Reiche Terac. 51 . . .	15 e
<i>tricerata</i> Mab. Sar. 575 . . .	76 g			<i>vestalis</i> Aur. Cup. 494	
<i>Trichiolaus</i> Aur. 389				<i>vestalis</i> Btlr. Terac. 51	
<b>Trichosemeia</b> Holl. 579				<i>vestalis</i> Fldr. Plan. 240 . . .	58 e
<i>Triclema</i> B.-Bak. 435, 444				<i>vestalis</i> Plan. 195	
<i>trigemma</i> Gaede Parn. 537				<i>vetula</i> Rothsch. Char. 137	
<i>trigonophora</i> Btlr. Nept. 201 . . .	48 e			<i>vetusta</i> Btlr. Euph. 187 . . .	44 a
<i>trimeni</i> Aur. Acr. 281				<i>vi</i> Sich. Terac. 50	
<i>trimeni</i> Aur. Cren. 206 . . .	49 a			<i>vibius</i> Hew. Xanth. 528 . . .	79 f
<i>trimeni</i> Aur. Cym. 152 . . .	35 e			<i>vicaria</i> Thur. Myc. 95	
<i>trimeni</i> Aur. Hesp. 564 . . .	75 d			<i>victoriae</i> Aur. Neoc. 112	
<i>trimeni</i> B.-Bak. Cup. 479				<i>victoriae</i> Neoc. 111	
<i>trimeni</i> Btlr. Ab. 568				<i>victoriae</i> Btlr. Spind. 413	
<i>trimeni</i> Btlr. Prec. 224 . . .	51 c			<i>victoriae</i> Spind. 415	
<i>trimeni</i> Btlr. Pseudacr. 194 . . .	46 b			<i>victoriae</i> Karsch Cup. 481 . . .	73 g
<i>trimeni</i> Btlr. Pseudon. 110				<i>victorina</i> Ww. Hen. 97	
<i>trimeni</i> Drc. Cooks. 302 . . .	63 a			<i>vidua</i> Btlr. Pier. 46 . . .	14 d, e
<i>trimeni</i> Cooks. 72				<i>vidua</i> Weym. Ab. 569	
<i>trimeni</i> Neave Spind. 413 . . .	69 g			<i>vigilans</i> Trim. Pseud. 109 . . .	28 g
<i>trimeni</i> Oberth. Eron. 62				<i>vilis</i> Fldr. Dieranuropsis 6	
<i>trimeni</i> Poull. Pap. 14				<i>villica</i> Aretia 5	
<i>trimeni</i> Wallgr. Iol. 400				<i>vinder</i> Cr. Hesp. 565	
<i>trimeni</i> Iolaus 396				<i>vinidia</i> Hew. Acr. 264 . . .	56 a
<i>Trimenia</i> Btlr. Myl. 35 . . .	11 c, d			<i>vinga</i> Hew. Ast. 342 . . .	65 f
<i>triocellata</i> Bart. Pseud. 109				<i>vinsoni</i> Gn. Ypth. 114 . . .	29 b
<i>triocellata</i> Strd. Prec. 226				<i>viola</i> Btlr. Char. 137	
<i>triocellata</i> Strd. Ypth. 115 . . .	29 d			<i>violacea</i> Btlr. Euph. 182	
<i>triophthalma</i> Mab. Ypth. 114	29 b			<i>violacea</i> Rothsch. Char. 136	
<i>tripunctata</i> Aur. Pent. 309 . . .	61 h			<i>violarum</i> Bsd. Acr. 277 . . .	55 a
<i>tripunctata</i> Aur. Rhop. 509				<i>violascens</i> Aur. Myc. 91	
<i>tripunctata</i> Mab. Hypol. 556 . . .	77 c			<i>violetta</i> Aur. Deud. 371 . . .	68 a
<i>tripunctata</i> Sm. Lipt. 337				<i>violetta</i> Sm. Char. 132 . . .	31 a
<i>tripunctata</i> Strd. Ypth. 115				<i>violinitens</i> Crowl. Palla 141	
<i>trisinatus</i> Neave Cycl. 552				<i>virescens</i> Suff. Sal. 216	
<i>trisinatus</i> Strd. Cup. 488				<i>virescens</i> Suff. Eron. 62	
<i>tristifera</i> Sar. 579 . . .	76 b			<i>virgata</i> Drc. Deud. 366 . . .	65 k
<i>tristis</i> Holl. Sar. 577				<i>virginea</i> B.-Bak. Epit. 356	
<i>trochylus</i> Fr. Cup. 489 . . .	74 a			<i>virgo</i> Btlr. Cup. 460	
<i>trophonissa</i> Aur. Pap. 13 . . .	2 b			<i>viridata</i> Strd. Prec. 226	
<i>trophonius</i> Ww. Pap. 13				<i>viridicaerulea</i> Bart. Euph. 188	44 c
<i>trophonius</i> Pap. 72				<i>viridinotata</i> Btlr. Euph. 184	
<i>tropicalis</i> Blach. Acr. 254				<i>viridis</i> Suff. Euph. 189	
<i>tropicalis</i> Bsd. Pent. 308 . . .	61 f			<i>virilis</i> Aur. Cup. 463	
<i>trypherotus</i> B.-Bak. Cup. 493				<i>virilis</i> Rothsch. Char. 136	
<i>tsadicus</i> Aur. Cycl. 552				<i>virilis</i> Strd. Prec. 226	
<i>tsava</i> B.-Bak. Sar. 578				<i>vitrea</i> Eltr. Acr. 254	
<i>tschadica</i> Aur. Pier. 40 . . .	12 f			<i>vittigera</i> Mab. Hypol. 385	
<i>tsiandava</i> Sm. Libyth. 294				<i>viviana</i> Stgr. Acr. 262 . . .	56 c
<i>tsiphana</i> Bsd. Deud. 375				<i>viviana</i> Acr. 307	
<i>tsita</i> Trim. Het. 550 . . .	77 k			<i>voeltzkowi</i> Karsch Pier. 41 . . .	13 d
<i>tsomo</i> Trim. Cup. 472 . . .	73 e			<i>vola</i> Ward Hen. 101	
<i>tucusa</i> Trim. Ked. 543				<i>vologes</i> Mab. Char. 139 . . .	32 d
<i>Tuerta</i> Wkr. 190				<i>voltae</i> E.-Sh. Lyc. 438 . . .	71 b
<i>tugela</i> Trim. Prec. 223 . . .	51 c			<i>vosscleri</i> Grünb. Gorg. 557 . . .	77 e
<i>tukua</i> Wallgr. Prec. 224 . . .	51 c			<i>vosscleri</i> Strd. Deud. 373	
<i>tullbaghia</i> L. Men. 105 . . .	29 e			<i>vosscleriana</i> Strd. Prec. 226	
<i>tullia</i> Strd. Lipt. 337				<i>vuilloti</i> Mab. Acr. 258 . . .	56 d

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*Vanessa* 216  
*Vanessini* 210  
*Vanessula* Dew. 227

	Plat.
vulgaris <i>Bllr.</i> Myc. 95 . . .	27 g
vulgaris <i>Stgr.</i> Byb. 208 . . .	49 c
vulneratus <i>Stgr.</i> Terac. 60 . .	20 f

**W.**

waga <i>Plözl</i> Caen. 516 . . .	80 d
waggae <i>E.-Sh.</i> Spind. 412	
wagneri <i>Suff.</i> Pier. 45	
wahlbergi <i>Antheraea</i> 6	
wahlbergi <i>Wallgr.</i> Hypol. 216	47 d
wakefieldi <i>Ward</i> Eux. 124 . .	29 f
walensensis <i>E.-Sh.</i> Pseudacr. 198	
walkeri <i>Bllr.</i> Terac. 56	a
wallacei <i>Neave</i> Het. 550 . . .	78 d
wallengreni <i>Bllr.</i> Terac. 56 . .	18 c, e
wallengreni <i>Trim.</i> Ked. 543 . .	78
wallengreni <i>Trim.</i> Phas. 426	
wambo <i>Plözl</i> Parn. 539 . . .	77 c
warburgi <i>Aur.</i> Pseudacr. 194 . .	46 c
wardi <i>Dre.</i> Euph. 183 . . .	44 d
wardi <i>Mab.</i> Deud. 374	
wardi <i>Mab.</i> Hen. 103	
watsoni <i>Bllr.</i> Padr. 531	
watsoni <i>Holl.</i> Tein. 554 . . .	77 f
wau <i>Wiehgr.</i> Cup. 482	
w-brunnea <i>B.-Bak.</i> Char. 139	
weberi <i>Holl.</i> Pow. 360	
weberi <i>Suff.</i> App. 38 . . .	12 d
weiglei <i>Plözl</i> Zoph. 512	
wellmanni <i>Weym.</i> Hen. 99	
welwitschi <i>Rog.</i> Acr. 281 . . .	54 d, 60 g
welwitschi <i>Rog.</i> Pier. 42 . . .	12 e
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westermanni <i>Ww.</i> Prec. 225 . . .	50 e, 51
westwoodi <i>Wallgr.</i> Pier. 40 . .	13 a
weymeri <i>Saalm.</i> Parn. 537	
weymeri <i>Suff.</i> Cym. 149 . . .	35 c
weymeri <i>Cym.</i> 150	
Weymeria 190	
whitnalli <i>Neave</i> Pap. 16	
whytei <i>Bllr.</i> Amaur. 77	
wigginsi <i>Neave</i> Acr. 276	
wigginsi <i>Acr.</i> 282	
willemi <i>Wallgr.</i> Cycl. 552 . . .	78 a, b
wilwerthi <i>Aur.</i> Euryph. 175 . .	41 a, b
wintgens <i>Strd.</i> Prec. 223	
wintoniana <i>E.-Sh.</i> Myl. 35	
wismanni <i>Suff.</i> Terac. 58	

wissmanni <i>Nicp.</i> Euph. 188	
wodwardi <i>E.-Sh.</i> Nept. 203	
woermanni <i>Plözl</i> Cel. 581	
wollastoni <i>Heron</i> Cer. 526	
wollastoni <i>Heron</i> Oxyp. 553	

**X.**

xantha <i>Sm.</i> Lipt. 334	
xanthias <i>Mab.</i> Paron 520 . . .	79 d
xanthionides <i>Holl.</i> Paron. 521 .	79 f
xantho <i>Mab.</i> Coen. 515	
Xanthodisca <i>Aur.</i> 528	
xantholucius <i>E.-Sh.</i> Terac. 59	
xanthomelis <i>Mab.</i> Cycl. 551	
xanthopeplus <i>Holl.</i> Pard. 530	79 e
xanthopocila <i>Holl.</i> Lyc. 454	72 e
Xanthospilopteryx 6, 190	
xanthostola <i>Holl.</i> Lipt. 334 . .	63 h
xanthus <i>Swh.</i> Terac. 59 . . .	20 a
xeneas <i>Hew.</i> Myc. 86 . . .	27 a
xiphars <i>Cr.</i> Char. 131 . . .	31 c
xyehus <i>Mab.</i> Caen. 515	
xylos <i>Mab.</i> Parn. 536 . . .	78 g
xypete <i>Hew.</i> Euph. 185 . . .	44 b
xypete <i>Euph.</i> 186	

**Y.**

yaunda <i>Karseh</i> Pent. 309	
yerburei <i>Swh.</i> Terac. 58 . . .	19 c
ypsilon <i>Saalm.</i> Trap. 559	
Ypthima <i>Hbn.</i> 113	
Ypthima 3, 4, 109	
ypthimoides <i>Bllr.</i> Neoc. 112	
ypthimoides <i>Neoc.</i> 111	
yulei <i>Bllr.</i> Myl. 34 . . .	22 a

**Z.**

zaddachi <i>Dew.</i> Euph. 190 . . .	44 c
zaira <i>Plözl</i> Hesp. 565 . . .	75 d
zalmoxis <i>Hew.</i> Pap. 12 . . .	1 b
zalmoxis <i>Papilio</i> 3	
zambesiaca <i>Ww.</i> Ab. 368 . . .	75 a
zambesina <i>Aur.</i> Acr. 285	
zambesina <i>Plözl</i> Ab. 568	

Plat.

	Plat.
zampa <i>Ww.</i> Euph. 190 . . .	42 c
zanjuga <i>Mab.</i> Ypth. 113 . . .	29 b
zaremba <i>Plözl</i> Caen. 516 . . .	80 d
zebra <i>Bllr.</i> Hesp. 566 . . .	75 d
zebra <i>Dre.</i> Batel. 347 . . .	64 d
zebra <i>Holl.</i> Pseudal. 379	
zebra <i>Rbl.</i> Hesp. 563	
zela <i>Hew.</i> Deud. 372 . . .	66 c
zelica <i>Bllr.</i> Char. 141 . . .	32 b
zelica <i>Ky.</i> Epit. 356 . . .	64 h
zeloides <i>Bllr.</i> Deud. 372	
zelomima <i>Rbl.</i> Deud. 372	
zelva <i>Hesp.</i> 566	
zelza <i>Hew.</i> Epit. 355 . . .	65 e
zelza <i>Epit.</i> 350, 354	
zena <i>Mr.</i> Cup. 469	
zenides <i>Strd.</i> Padr. 531	
zenkeri <i>Karseh</i> Lyc. 456 . . .	72 h
zeno <i>Trim.</i> Padr. 531 . . .	70 d
zenobia <i>F.</i> Pap. 16 . . .	3 b
zephora <i>Plözl</i> Plat. 524 . . .	78 b, 79 c
zephyrus <i>Marsh.</i> Terac. 60	
zerita <i>Plözl</i> Pseuder. 320 . . .	62 f
Zeritis <i>Bsd.</i> 417	
zeles <i>Acr.</i> 277, 288	
zetes <i>L.</i> Acr. 280	
zellersledli <i>Wallgr.</i> Geg. 540	
zeuxo <i>L.</i> Phas. 431	
zilka <i>Sm.</i> Phas. 427	
zimbazo <i>Trim.</i> Oxyp. 553	
zinebi <i>Bllr.</i> Myc. 86	
zingha <i>Stoll</i> Char. 128 . . .	32 d
zinlgraffi <i>Karseh</i> Gem. 513	
zilenides <i>Fruhst.</i> Melan. 83	
zitja <i>Bsd.</i> Acr. 266 . . .	55 g
Zizeesia <i>Chapm.</i> 459	
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zochalia <i>Bsd.</i> Pier. 41 . . .	12 e
zoë <i>Grand.</i> Terac. 52 . . .	16 e
zoë <i>Hpffr.</i> Terias 65 . . .	22 f
zonara <i>Bllr.</i> Euryph. 172 . . .	41 d
zonata <i>Hew.</i> Acr. 288 . . .	53 a
zonata <i>Acr.</i> 285	
zoolina <i>Ww.</i> Char. 140 . . .	32 b
Zophopetes <i>Mab.</i> 511	
zoroastres <i>Druee</i> Pap. 15	
Zululba 5	
Zygaena 5	
Zygaenidae 5	
zymna <i>Dbl. &amp; Hew.</i> Megal. 362	65



## List of Errata in Vol. XIII.

- P. 6 line 20 from below, for Bombycids place Bombyces.  
P. 18 line 6 from below, for (6 b ♂) place: (6 b ♀).  
P. 37 line 24 from above, for (11 c ♂) place: (11 e ♂).  
P. 44 line 17 from below, add the marginal name: *glucki*.  
P. 45 line 26 from above, for (14 e ♂) place: (14 c ♂).  
P. 51 line 14 from above, for (Vol. IX, pl. 73 c) place: (Vol. IX, pl. 73 b).  
P. 61 line 5 from above, after (20 f, g add: as *ducissa*).  
P. 61 line 9 from above, for (14 d) read: (15 d).  
P. 62 line 6 from above, for (21 e, f) place: (21 b, c).  
P. 66 line 2 from above, after (22 f add: as *electo* under surface).  
P. 85 line 7 from above, for (26 c) read: (26 e).  
P. 93 line 6 from below, for füllehorni place: fülleborni.  
P. 100 line 7 from above, after *Ward* place: (? 28 b).  
P. 113 line 10 from below, after (29 c place: as *discala*).  
P. 115 line 17 from above, after (29 d place: as *binucleata*).  
P. 116 line 16 from below, after (29 c place: as *albida*).  
P. 118 line 30 from above, for p. 85 read: p. 83.  
P. 121 line 19 from below, for *Antanarctia* read: *Antanartia*.  
P. 127 line 5 from above, after (30 b place: as *castor* under surface).  
P. 132 line 8 from above, after (31 b place: as *cithaerion*).  
P. 133 line 21 from below, for (32 c) place: (31 c).  
P. 148 line 2 from below, for (34 e) place: (34 c).  
P. 168 line 19 from above, for (37 e) read: (37 c).  
P. 169 line 7 from below, after *atossa* place: *Hew*.  
P. 193 line 10 from above, for (46 d) place: (46 d, e).  
P. 208 line 5 from above, for *achelaia* read: *acheloia*.  
P. 208 line 14 from below, after (49 c place: as *murina*).  
P. 214 line 22 from above, for *chapmanni* read: *chapmani*.  
P. 221 line 12 from above, for (50 f) read: (51 f).  
P. 223 line 5 from above, for (51 c) read: (51 e).  
P. 224 line 29 from below, for „in the Senegal“ read: „on the Senegal“.  
P. 230 line 17 from above, after *hecataea* place: (52 f).  
P. 253 line 24 from below, after *semipunctella* place: *Strd.*  
P. 270 line 24 from above, for *acquatorialis* read: *cquatorialis*.  
P. 295 line 7 from above, for (61 a) place: (61 a, b).  
P. 296 line 16 from above, after *Hew.* eliminate: (61 a).  
P. 296 line 21 from above, after *Auriv.* eliminate: (61 a).  
P. 308 line 16 from below, for (63 a, b) place: (63 a).  
P. 309 line 29 from below, after *Grünb.* eliminate: (63 c).  
P. 342 line 11 from below, after *Plötz* add: (65 f).  
P. 345 line 7 from below, after *Dudg.* eliminate: (65 c).  
P. 349 line 22 from below, after *Auriv.* eliminate: (65 f).  
P. 364 line 11 from above, for (65 g) read: (65 f).  
P. 366 line 15 from below, after *Karsch* eliminate: (56 h).  
P. 367 line 3 from below, for (65 i) read: (65 i, k).

- P. 371 line 10 from above, after *Karsch* eliminate: (65 k).  
P. 371 line 17 from above, after (68 a add: as *deritas*).  
P. 382 line 4 from below, after *Hew.* eliminate: (68 b).  
P. 439 line 18 from above, for *lunulata* read: *lunulata*  
P. 442 line 17 from below, after *sylvanus Dr.* eliminate: (74 f).  
P. 443 line 23 from above, after *Neave* eliminate: (72 b).  
P. 444 line 24 from below, after *Trim.* eliminate: (72 g).  
P. 503 line 6 from below, for *scotios* read *skotios*, and transf. on p. 503 (B) after line 21 from above.
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# Corrections of the Plates of Volume XIII.

Pl.	2. Fig.	for	humbloti	place	humbloti
9 a					
15 a	3.	„	ratheo	„	laeta
15 b	1.	„	semialbus	„	semialba
15 f	5.	„	deidamiaides	„	deidamioides
16 g	1.	„	torrida	„	punctigera
16 g	4.	„	buxtoni	„	jalone
17 a	1, 2.	„	buxtoni	„	phleggyas
18 b	2.	„	albomaculatus	„	albomaculata
18 e	2.	„	gueni	„	guenei
18 f	7.	„	pallene ♂ U	„	pallene ♀ U
19 b	2, 3.	„	heuglini	„	evagore
19 c	5, 6.	„	yerburi	„	yerburci
19 e	1.	„	omphale ♀	„	gavisa ♀
20 f	5.	„	ducissa	„	sulfuratus
20 g	1.	„	„	„	„
22 d	3. u. 4.	„	floricula	„	floricola
22 e	1.	„	punctilincata	„	punctinotata
22 f	9.	„	electo ab.	„	auricillius
23 d	3.	„	niamus	„	niavius
25 c	3.	„	comoranus	„	affinis
25 d	1.	„	albimacula	„	lohengula
25 d	2.	„	lohengula	„	albimacula
28 f	4.	„	dyscala	„	dyscola
29 b	6.	„	ilonia	„	hoehneli
29 c	3.	„	dyscala	„	dyscola
29 c	4.	„	albida	„	conradsi
29 d	1.	„	binucleata	„	binucleolata
29 f	1.	„	eurinome	„	ansellica
30 b	1.	„	caslor	„	godarli
30 c	3.	„	eudoxus	„	mechowi
31 a	1.	„	boueti	„	lasli
31 a	3.	„	smaragdalis	„	butleri
31 b	1.	„	cithaerion	„	cithaeron
31 d	2.	„	lichas	„	othetto
32 b	3.	„	nichelas	„	nichetes
32 d	1.	„	varanes	„	vologses
34 d	1.	„	hypolha	„	hypatha
34 d	3.	„	hesiodus ♂	„	hesiodus ♀
35 a	2.	„	fumosa ♀	„	fumosa ♂
35 b	3.	„	hyorbilina	„	hyarbilina
35 c	2.	„	jodulla	„	jodutta
35 d	4, 5.	„	ehmekci	„	ehmekci
35 e	5.	„	alcimeda	„	lrimeni
36 c	2.	„	aramis	„	anitorgis
37 d	2.	„	amicca	„	amicia
37 e	3.	„	schulzei	„	schultzei
39 d	4.	„	ribensis	„	obtusanguta
39 e	1, 2.	„	acutangula	„	ribensis
40 a	1, 2.	„	cutteri	„	fasciata
40 a	4.	„	barce	„	maculata
41 a	1.	„	wilwerthi	„	wilwerthi
41 b	1.	„	„	„	„
42 a	3, 4.	„	hybridus	„	coprates
42 b	2.	„	ruspina	„	eleus
42 b	3.	„	eleus	„	ruspina
42 c	3, 4.	„	edwardsi ♂	„	edwardsi ♀
44 a	2.	„	gausape	„	caerutescens
44 c	5.	„	rana	„	viridimacula
45 a	1.	„	luperca	„	variegata
47 d	4.	„	chapmani	„	fasciata
48 a	1.	„	dubius	„	dubia
48 a	5.	„	theophana	„	theophane
48 b	3, 4.	„	„	„	„
48 d	4, 5.	„	agatha ab.	„	jordani
48 g	6.	„	umbrina	„	howensis
49 c	2.	„	rularis	„	crameri
49 c	5.	„	murina	„	pagenstecheri
49 e	1.	„	angulata	„	angulata
50 b	3.	„	anacardi	„	nebulosa ♂
51 d	2.	„	galami	„	furcata
51 e	5.	„	coelestis	„	coelestina
51 f	3.	„	musa	„	andremiaja ♂
52 d	3.	„	schoeneia	„	schacneia
52 f	3.	„	phalanla	„	aethiopica

Pl.	1, 2, 3. Fig.	for	hova	place	hova
53 c					
54 c	2.	„	barberi	„	chilo
54 c	4.	„	wetwitschi	„	lobemba
54 f	5.	„	abdera	„	nigrescens
55 b	1.	„	anacreon	„	anacreontica (?)
55 c	5.	„	atolmis	„	aconlias
55 d	4.	„	nelusca	„	neluska
55 d	6.	„	aglaonice	„	rhodesiana
56 a	3.	„	rougeti	„	buxtoni
56 b	2, 3.	„	plaeponina	„	rowena
57 a	3.	„	orinata	„	orina
57 b	1.	„	penelopeos	„	derubescens
57 c	1.	„	lycoa	„	media
57 d	2.	„	amphiprotea	„	inaureata
57 d	3.	„	pseudoprotea	„	dorotheae
57 d	5.	„	melaprotea	„	dorotheae
58 c	4.	„	derwitsi	„	pseudeuryta
58 f	1.	„	umbra	„	macarioides
58 f	2.	„	umbra ♂	„	umbra ♀
61 a	3.	„	ancoata var.	„	latus var. (?)
61 b	3.	„	geryon	„	rogersi
62 b	4.	„	krausi	„	krausci
62 f	2.	„	cleaza	„	catharina
62 i	4.	„	heaultcoecuri	„	heaultcoecuri
63 f	4.	„	gyrula	„	gyrula
63 g	5, 6.	„	libya	„	lybia
64 a	6.	„	adelgilla	„	adelgitha
64 d	1. u. 2.	„	millori	„	millari
64 g	5.	„	baldwia	„	baldura
66 b	3. u. 4.	„	derilas	„	violetta
67 c	7, 8.	„	mermeros	„	teucoceros
68 a	2, 3.	„	derilas	„	violetta
68 e	6, 7.	„	seiophila	„	sciaphila
70 f	1.	„	orthrus ♀	„	laikosama ♀
70 f	4.	„	laikosama ♀	„	orthrus ♀
71 c	5.	„	lunulala	„	lithas
71 c	6.	„	lithas	„	lunulala
71 d	9.	„	brunnea	„	brunneus
71 e	1.	„	„	„	„
71 h	3. u. 4.	„	licamenus	„	lisamena
72 b	3.	„	amarah	„	amarah (vergröß.)
72 b	6.	„	obscura	„	obcurus
72 k	5.	„	distinctissima	„	disincludesignalus
73 b	6, 9.	„	melaena	„	melas
73 f	9.	„	trimeni	„	asleris
73 i	1.	„	makalahoena	„	mahalakoacna
73 i	2, 3.	„	patricia	„	patricius
73 i	6.	„	glauca	„	glaucus
74 f	9.	„	ignota	„	ignotus
74 h	1.	„	togara	„	micylus ♀
74 h	2, 3, 4.	„	micylus	„	logara
74 h	6.	„	pseudopunctatus	„	punctatus
74 h	8.	„	gussfeldti	„	bueronicus
75 b	1, 2.	„	lactaea	„	annicris
75 b	3.	„	levubu	„	defecta
75 d	1.	„	secussa	„	lrimeni
76 a	5.	„	maculatus	„	biseriatus ♂
76 a	6.	„	biseriatus	„	biscerialus ♀
76 b	4.	„	mookczi	„	mokeczi
76 b	6.	„	apicalis	„	johnstoni
76 f	5.	„	laciis	„	tristis
76 f	7.	„	aurimargo	„	brigidella
76 g	1.	„	„	„	„
76 h	2.	„	lucens	„	lugens
77 h	2.	„	distincta	„	distinctus
77 i	3.	„	kamboe	„	kambore
77 k	5.	„	lepeletierii	„	lepeletieri
78 d	2.	„	mohozura	„	mohozulza
78 d	3, 4.	„	fenestratus	„	fenestrata
79 b	1, 2.	„	schultzi	„	schulzi
80 a	4.	„	hidaroides	„	hidarioides
80 b	2.	„	binaeratus	„	binaerata
80 c	3.	„	maracandica	„	maracanda
80 g	1, 2.	„	buchholzi	„	buchholzi

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IN COLLABORATION WITH WELL-KNOWN SPECIALISTS

EDITED BY

DR. ADALBERT SEITZ, PROFESSOR



DIVISION I: FAUNA PALAEARCTICA VOL. 1—4

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## Vol. 13.

## Index of Plates.

The numbers indicate the plates.

On each plate, for want of space, only the first and last of the genera represented on the plate are stated, for instance on pl. 52 only „*Precis-Lachnoptera*“, whilst it also contains figures of species of the genus *Antanartia*, *Argynnis* enumerated in the index of plates, as stated in the text-volume on p. 228—231.

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Cyparissus

Cyparissus

Cyparissus

















# PAPILIO



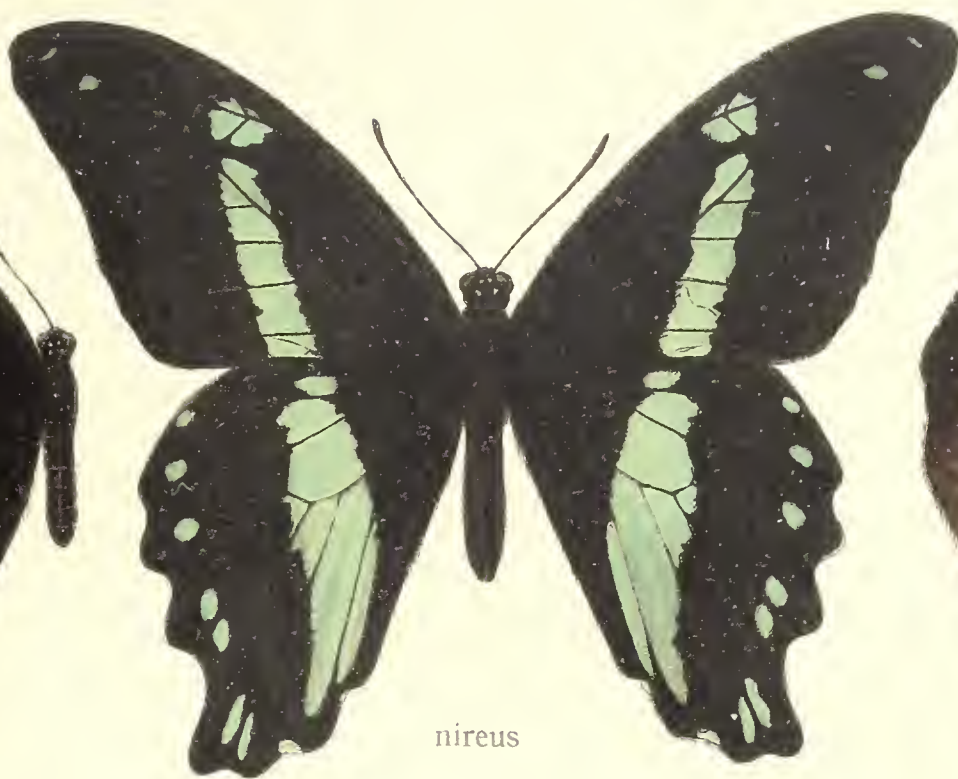




a



brontes



nireus



nireus U

b



bromius



lyaeus



lyaeus U

c



chrapkowskii



bromius



bromius U





a

*hornimani**charopus**oribazus**pseudonireus*

b

*phorbanta* ♀*epiphorbas**epiphorbas* U*delalandei* ♂

c

*phorcas**thersander**ansorgei*











a



ophidicephalus



illyris



kirbyi

b



lormieri U



lormieri

c



sisenna



evombar



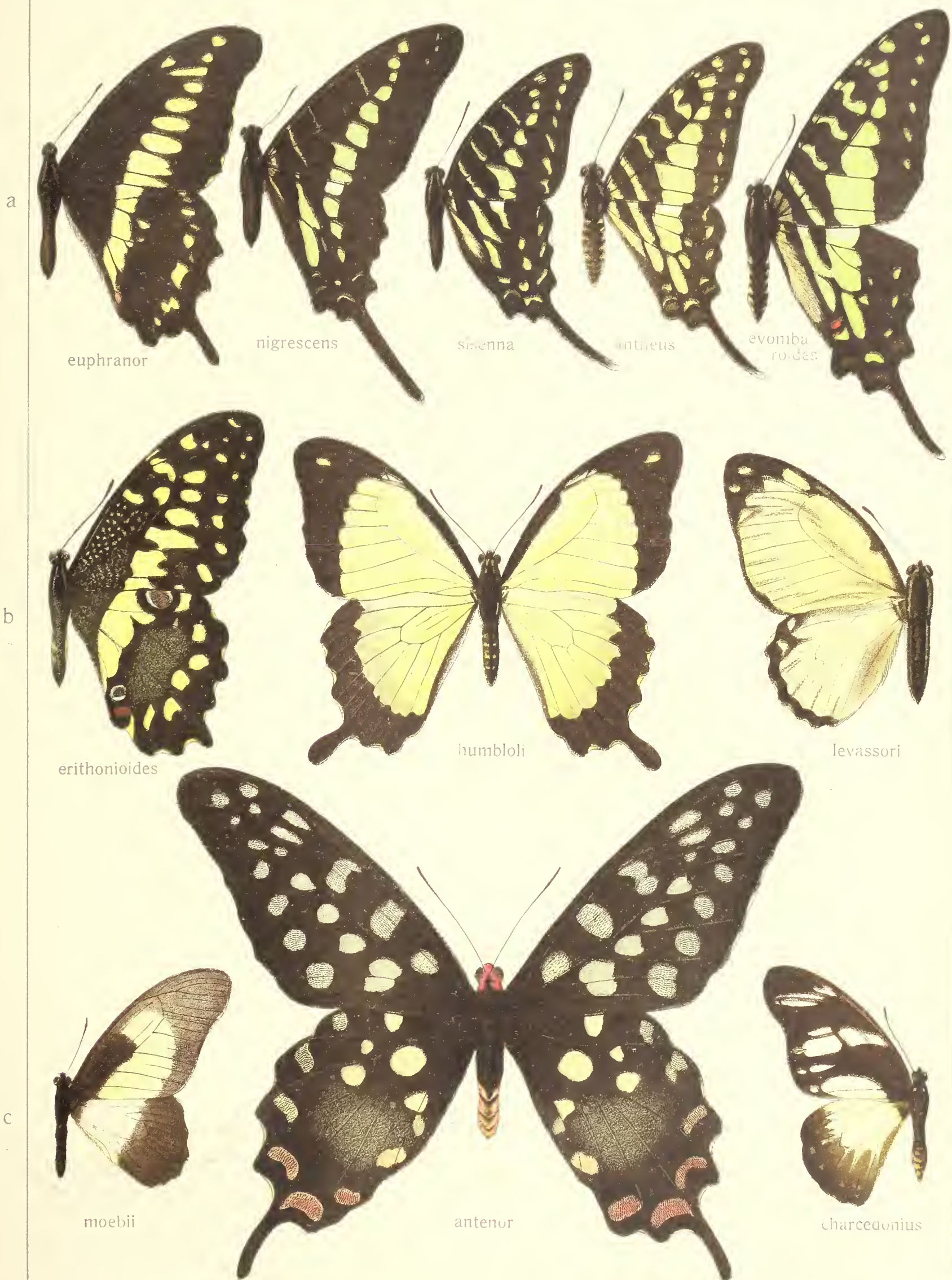
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colonna



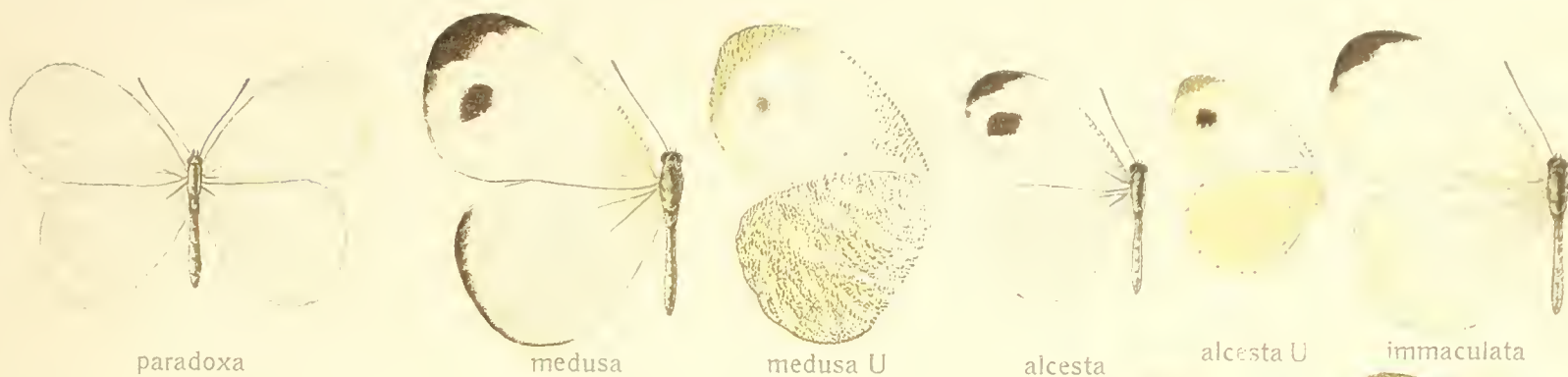








a



b



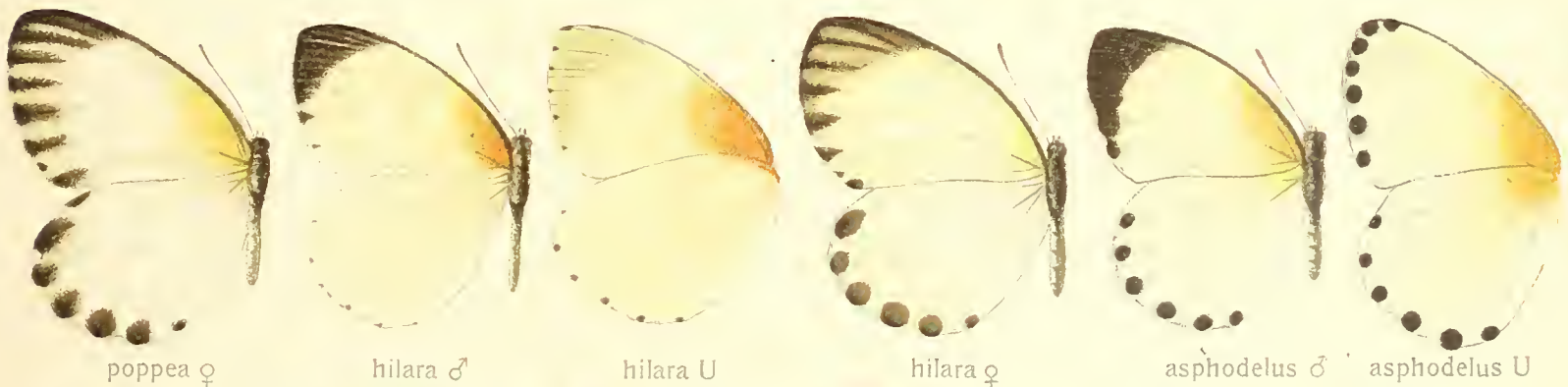
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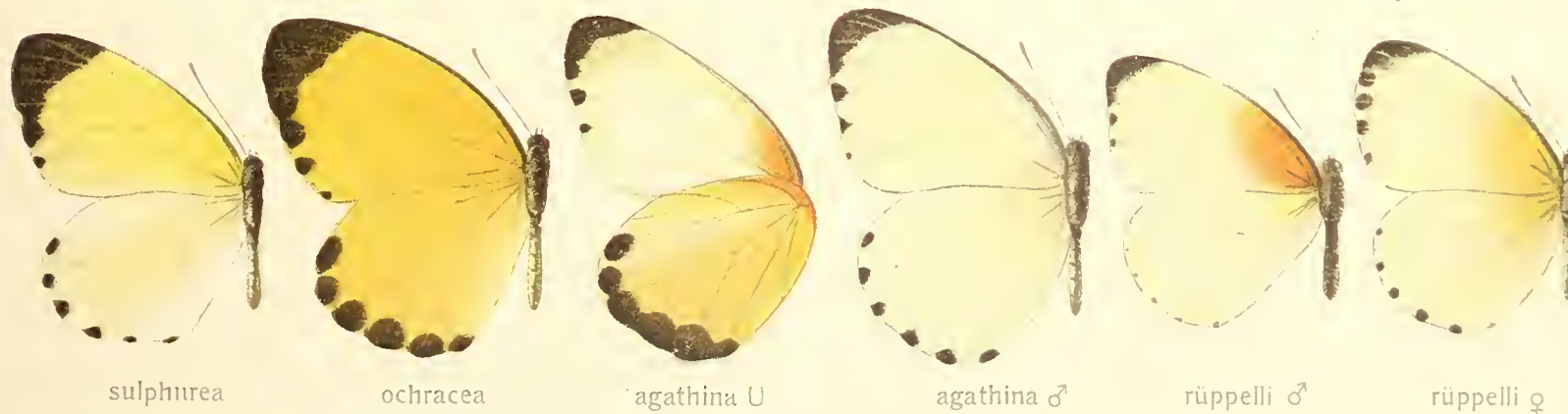
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e



f



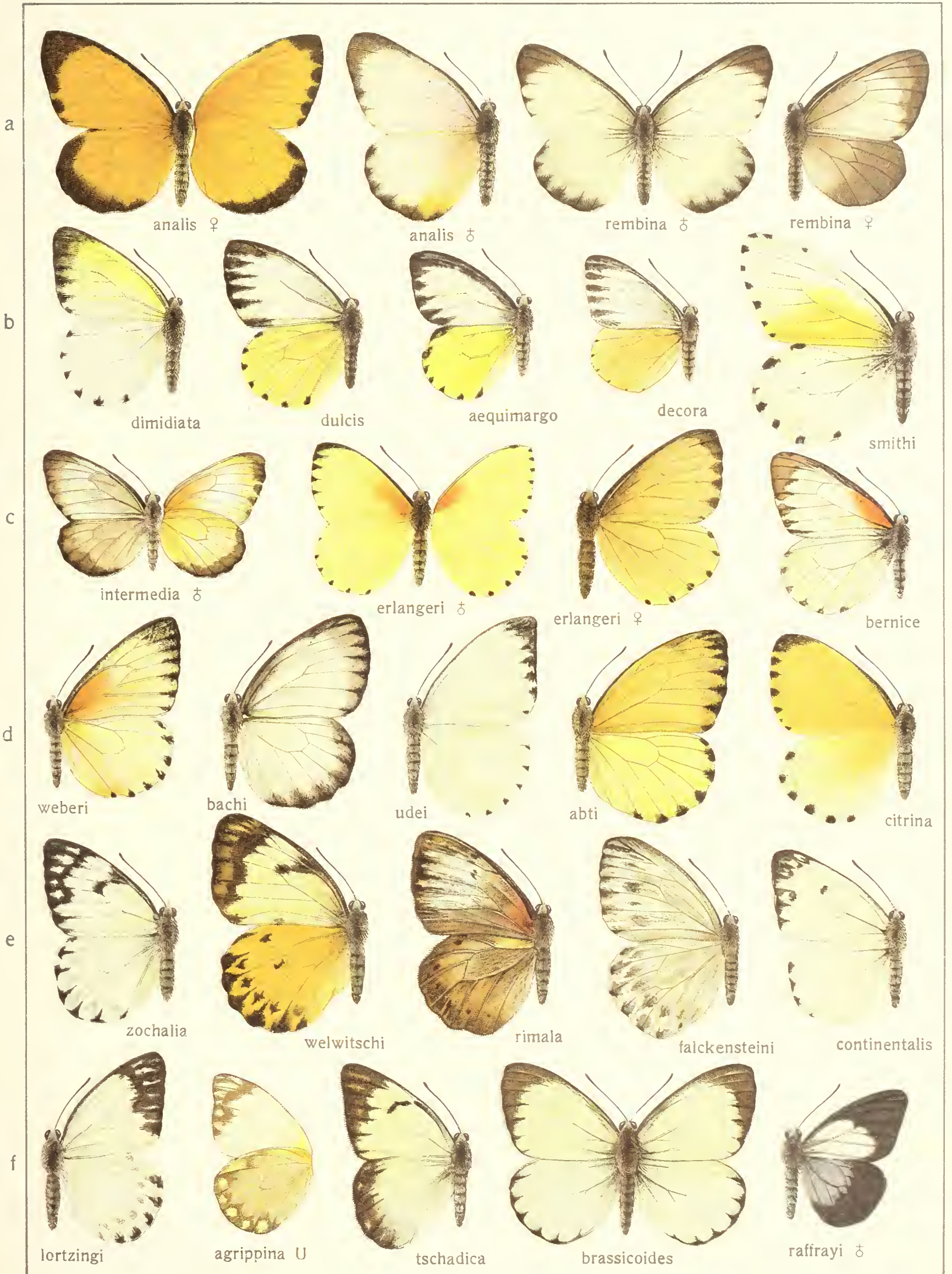












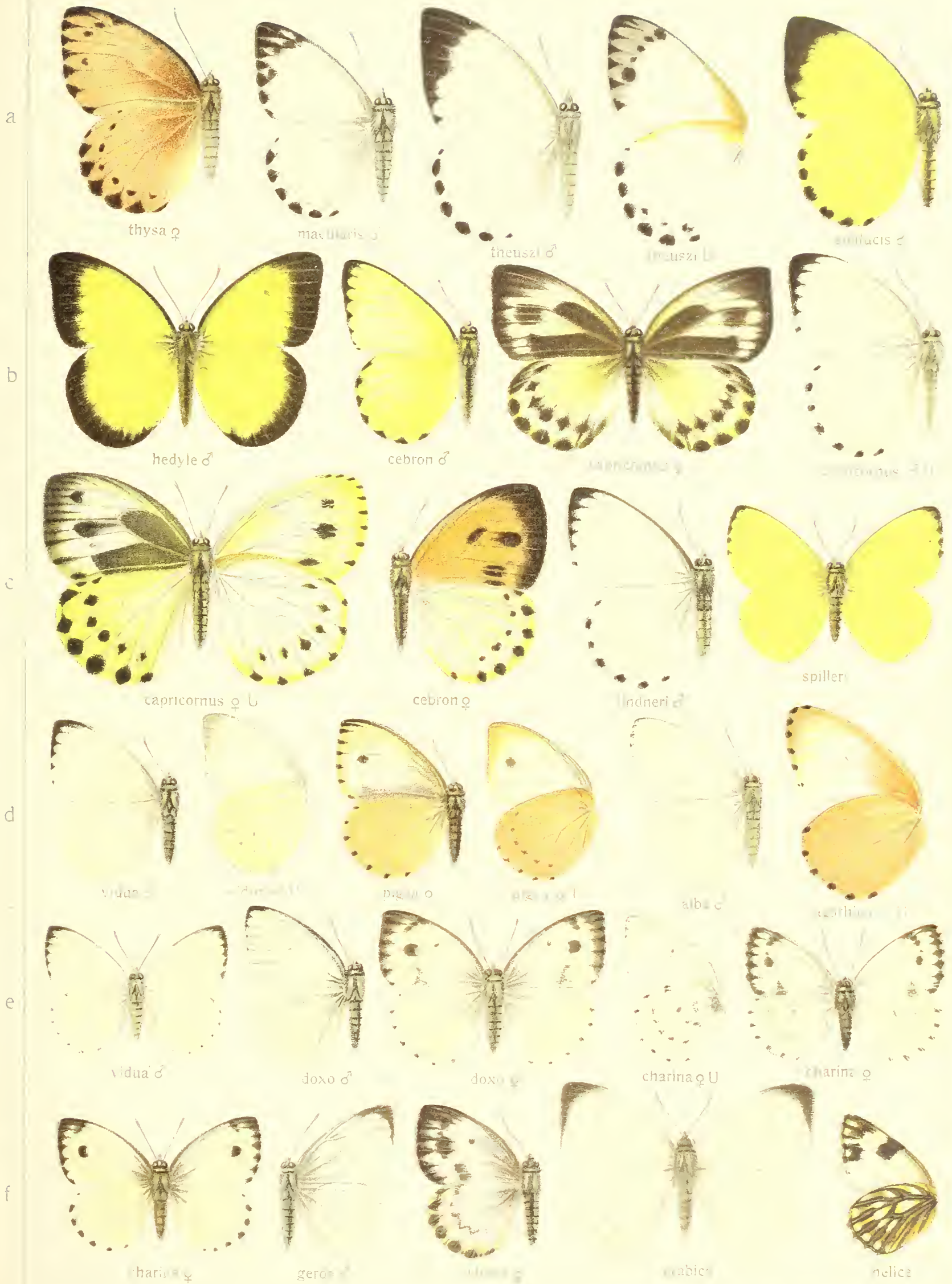
















a



johnstoni U



johnstoni



ratheo



balangensis

b



semialbus



glucki



anomala



dentigera

c



cygnophila



aurora

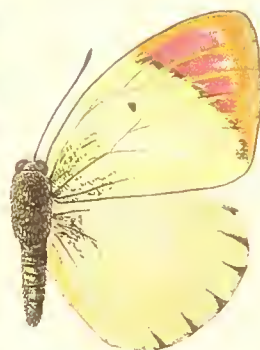


sinalata



thalassina

d

regina  
♀

schuberti



flotowi



guenei



doubledayi

e



hanningtoni



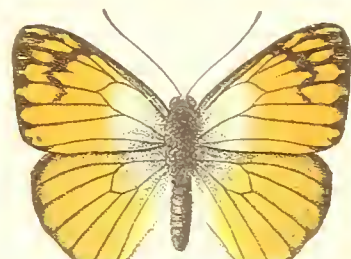
vesta



venustus



aurigineus



gaudens

f



niveus ♂



niveus ♀



agoye



bowkeri



deidamiaides



simplex



ithonus











a



buxtoni ♀



buxtoni ♀ U



erone ♂



erone ♂ U



erone ♀

b



ione ♂



ione ♀



bacchus ♂



anomalus ♀



bacchus ♀



regina ♂

c



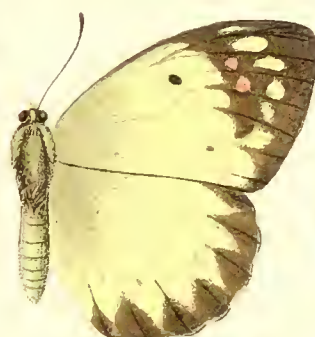
regina ♂ U



anax ♀ ab.



anax ♀ f. flavimacul.



anax ♀ f. flava



anax ♀ U

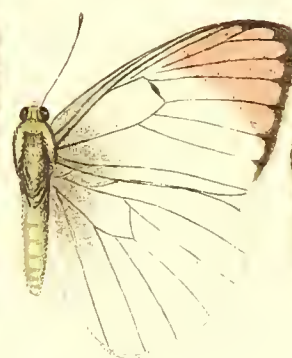
d



anax ♂



anax ♀

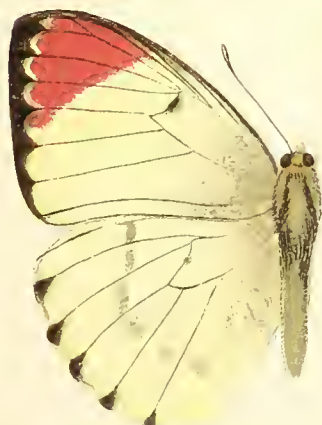


forti ♂



forti ♀

e



hetaera ♂



hetaera ♂ U



sulfurea ♀



rolificus ♀



sulfurea ♀ U



































a



petiverana ♀



morgeni ♂

b



mercedonia ♂



formosa ♂



goudoti ♂

c



euphon ♂



dominicanus ♂



dominicanus ♂U

d



vashti ♂



nossima ♂



nianius ♂













a



cartarea



bulbifera



psittalea

b



fenestrata



ellisa



damocles

c



hecatorides



eglarëia ♂



comoranus

d



abiracul



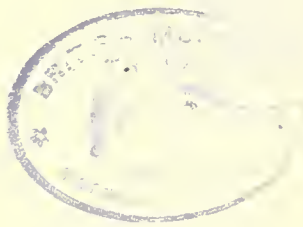
lohengula



mitra



desjardinsi



















a



campina U

obscura U

perspicua

perspicua U

elisi

peitho

maevius

b



phaea

phaea U

? anganavo ♂

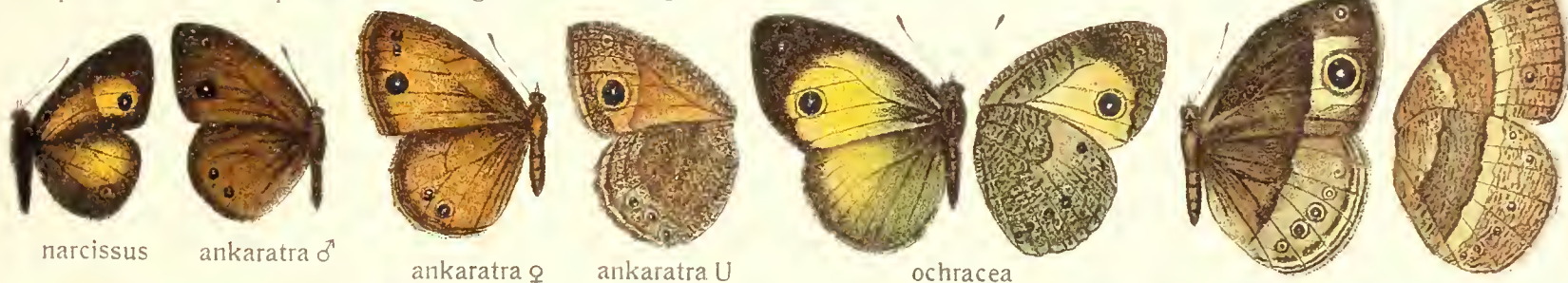
? anganavo ♂ U

strigula

ankova U

fraterna

c



narcissus

ankaratra ♂

ankaratra ♀

ankaratra U

ochracea

teratia

teratia U

d



simonsi

eliasis

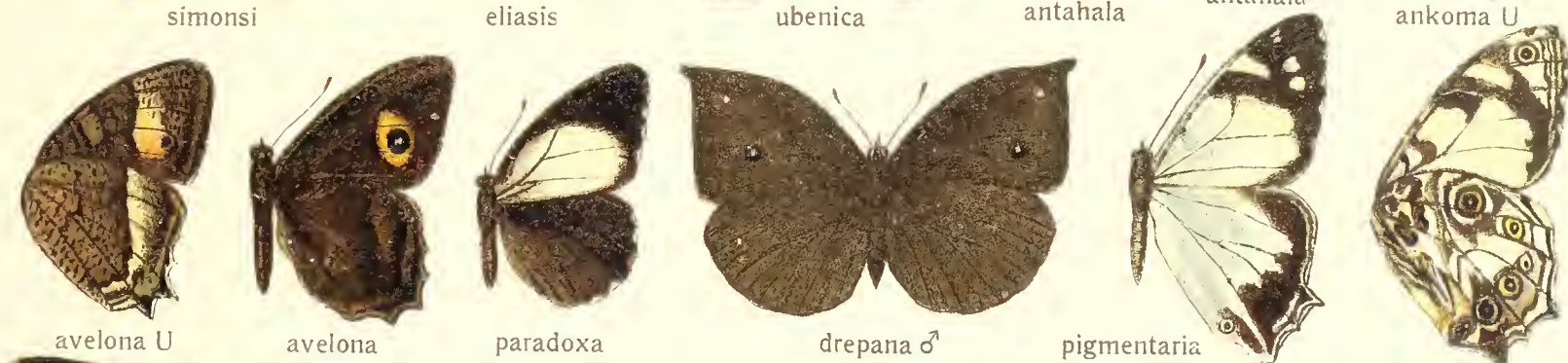
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ankoma U

e



avelona U

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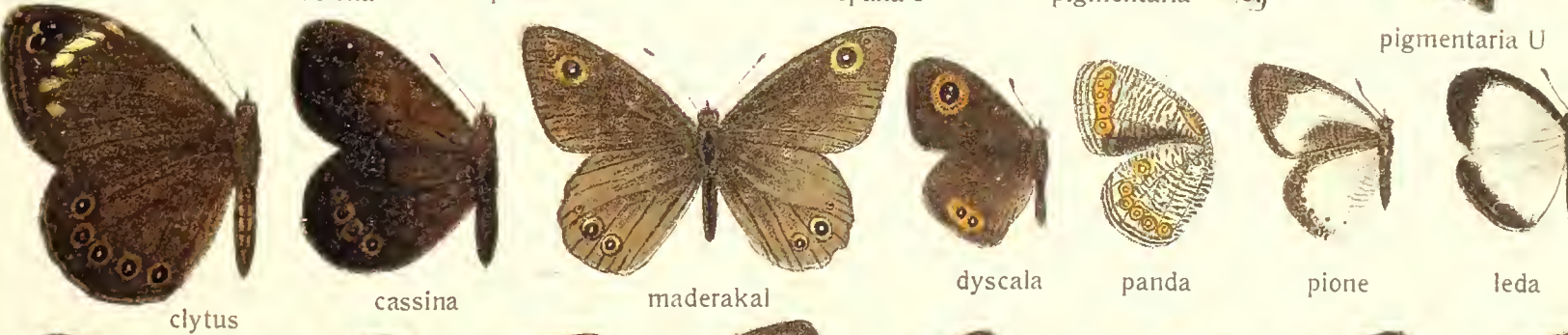
paradoxa

drepana ♂

pigmentaria

pigmentaria U

f



clytus

cassina

maderakal

dyscala

panda

pione

leda

g



hippia ♀

cassius

vigilans

hyperbius

narycia

bera ♂

bera ♂ U



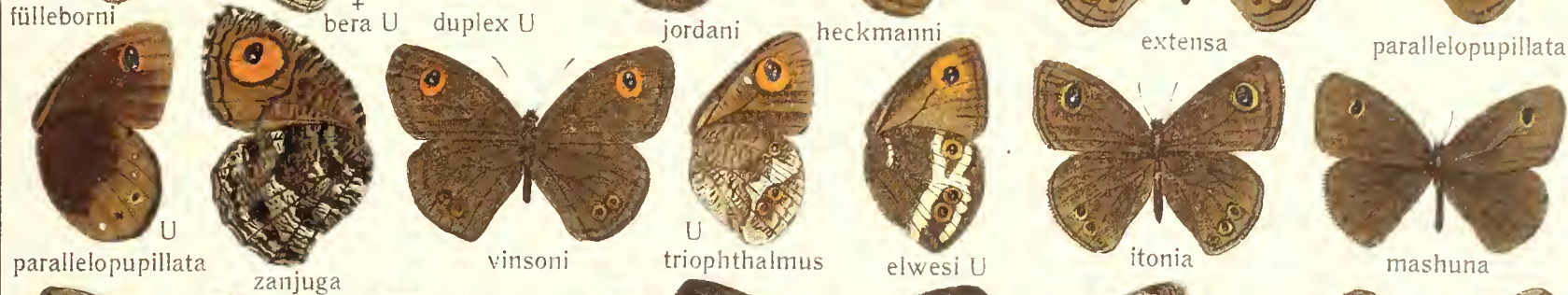




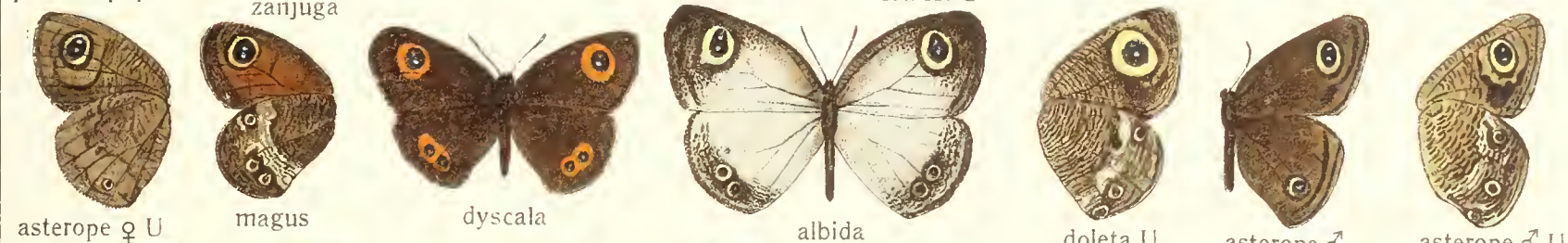
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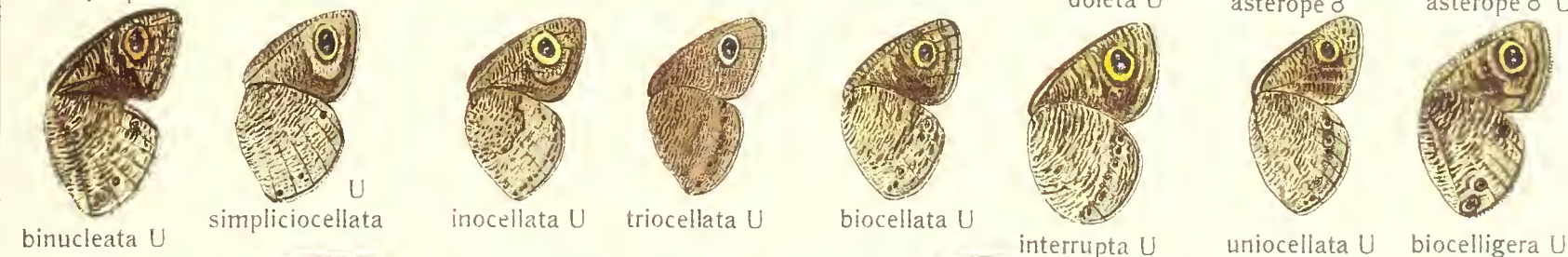
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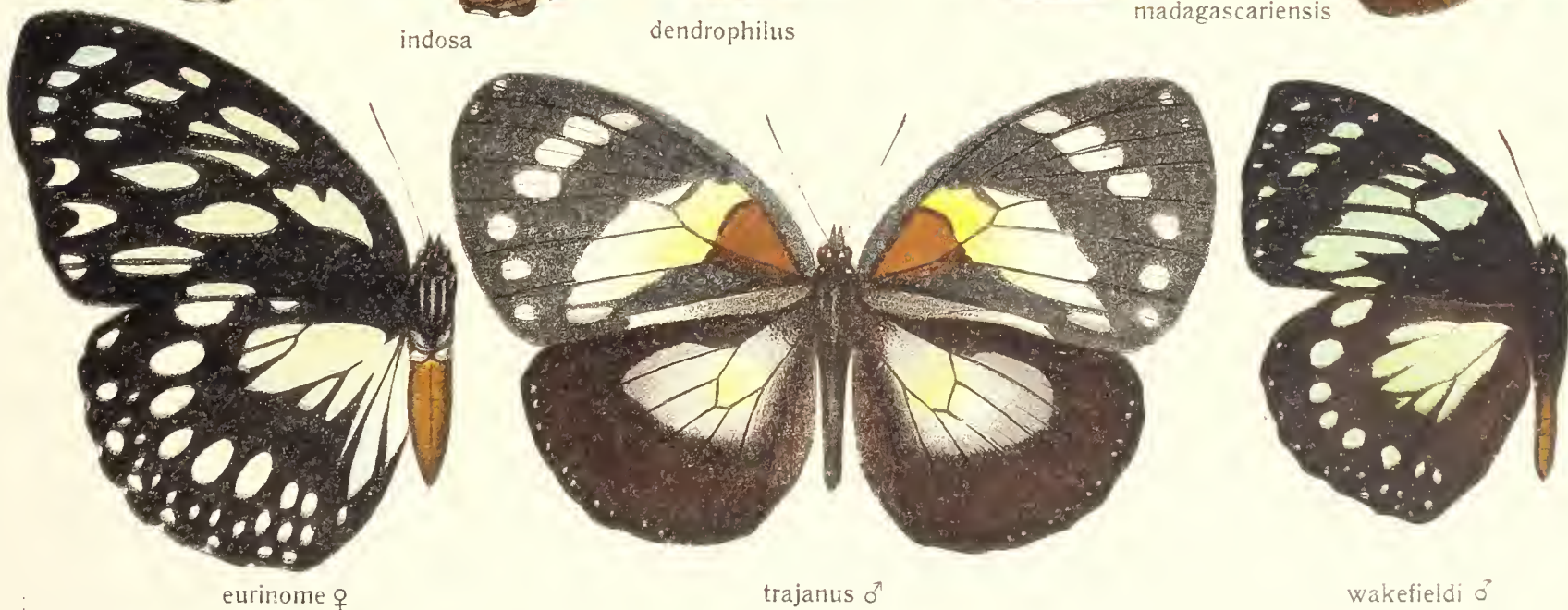
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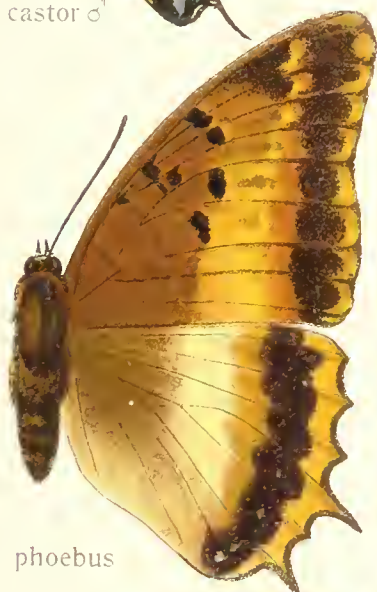
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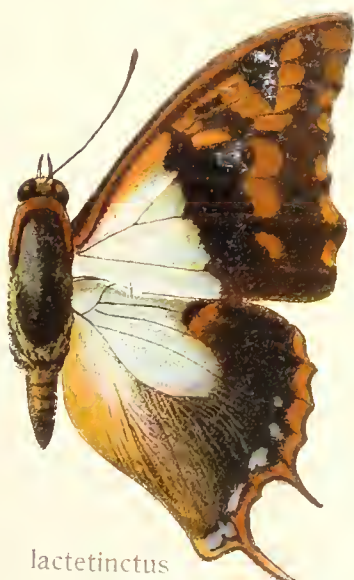
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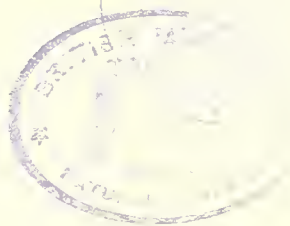
d



















a



montei ♂



montei ♀



bohemanni ♂



bohemanni ♀

b



manica



guderiana ♂



etheocles ♂



ochracea ♀

c



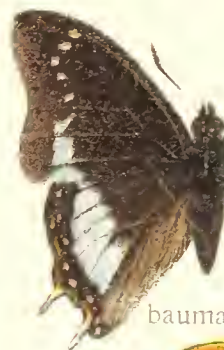
cedreatis ♀



hildebrandti



thysi



baumanni



kheili

d



protoclea ♂



protoclea ♀



anticlea ♂



azota ♀

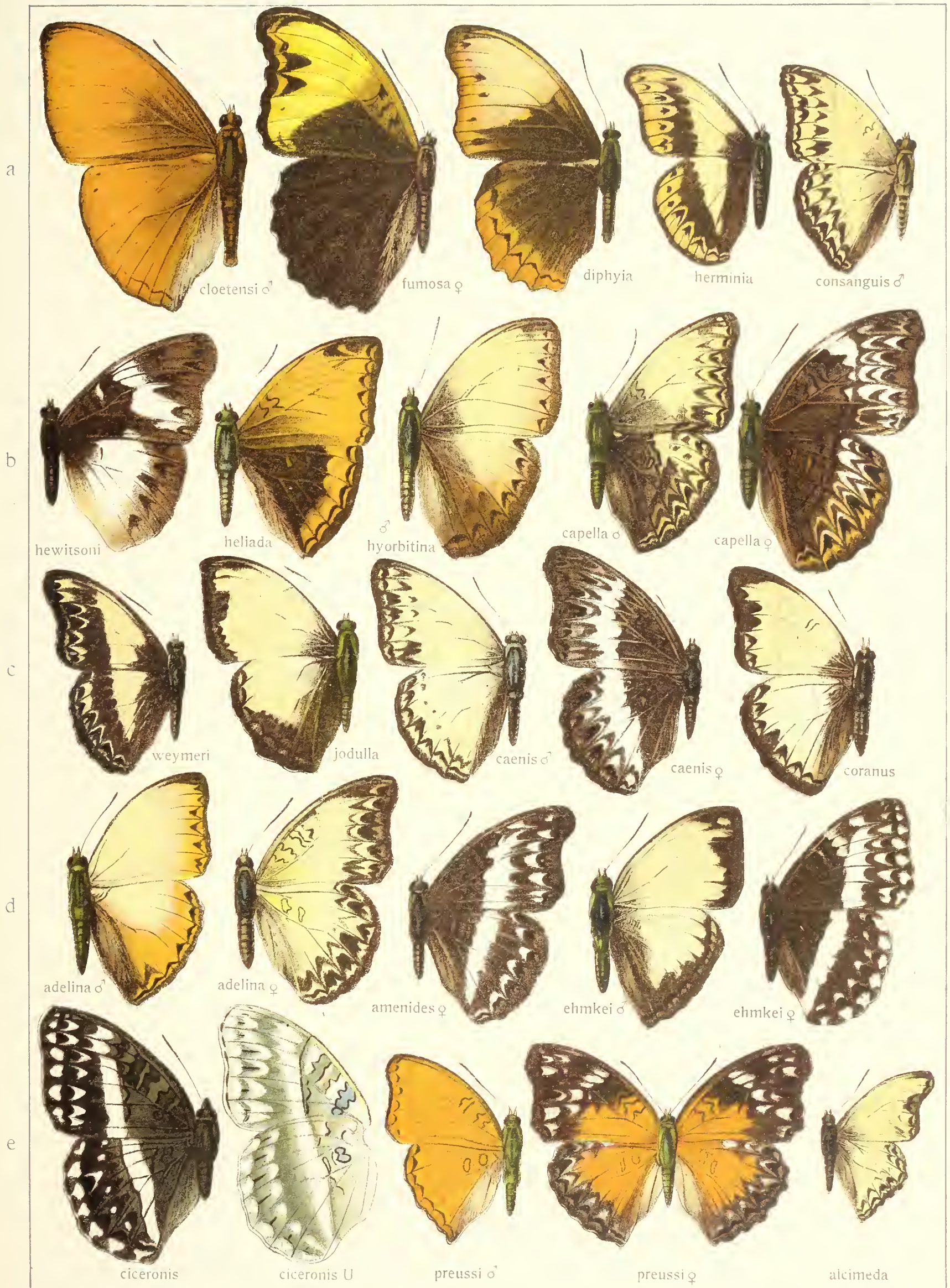


















































a



cutteri ♀



cutteri ♂



cutteri



barce ♂



leonis ♂

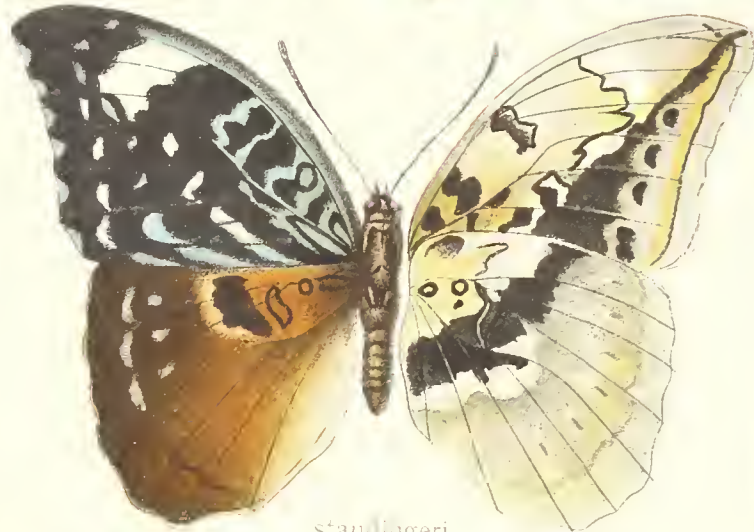
b



achillaena



arcadins



staudingeri

c



plistonax



theognis



theognis ♀

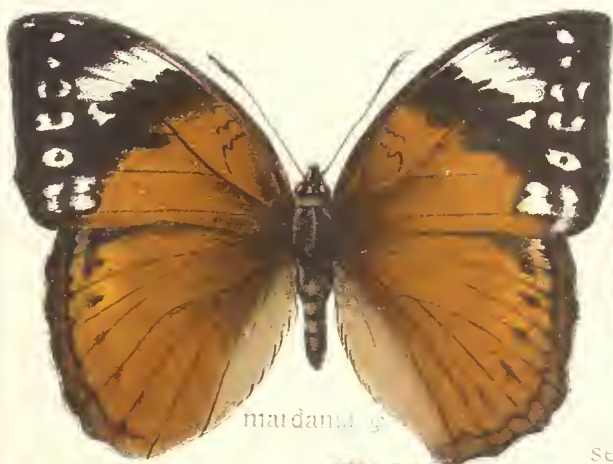


cocalia ♀



mardania ♂

d



mardania ♂



senegalensis ♂



senegalensis ♀



orientis ♂



orientis ♀

e



cinaethon



comus ♀



comus ♂



danina



nivaria





a



wilverthi ♂

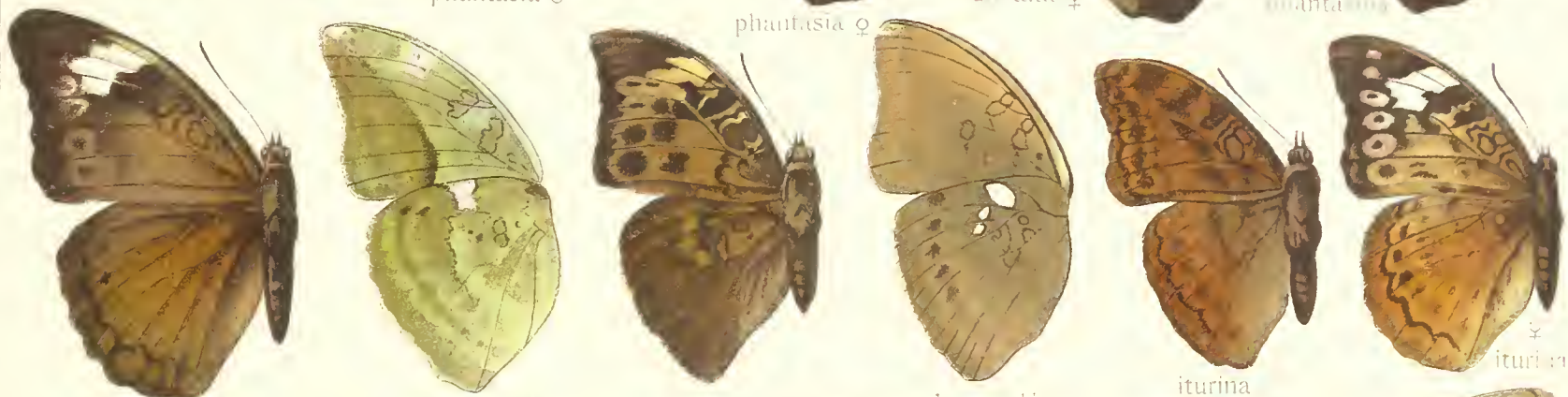
phantasia ♂

phantasia ♀

aritata ♀

manta ♂

b



wilverthi ♀

demetra ♂ U

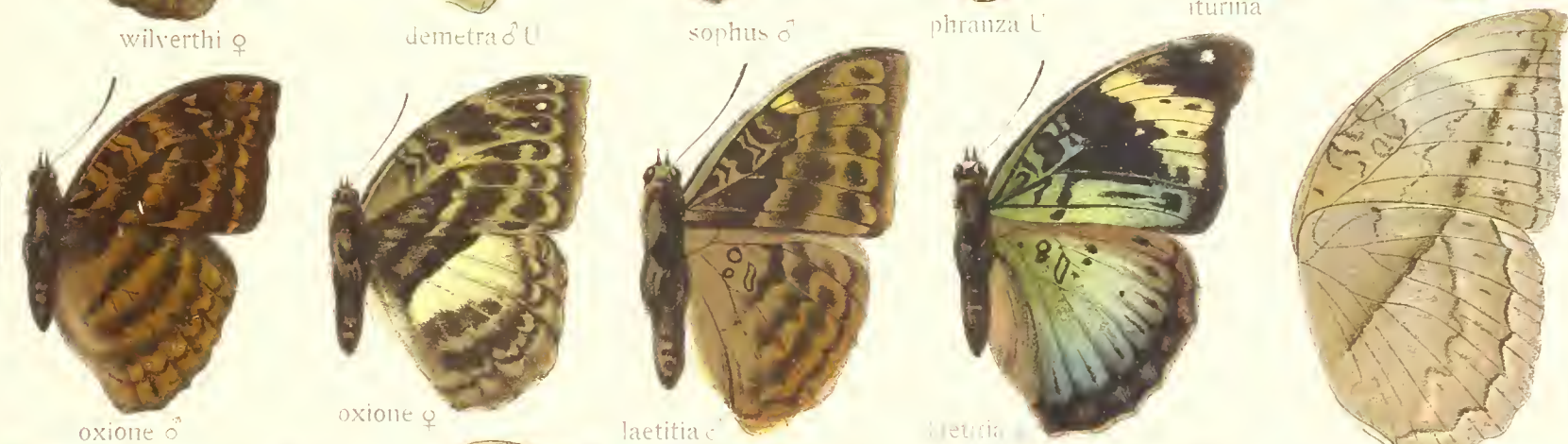
sophus ♂

phranza U

iturina

iturina ♀

c



oxione ♂

oxione ♀

laetitia c

Meturia

Meturia

d



mandinga ♂

mandinga U

zonara ♀

ibesa

abesa

absolon

catshena

e



ikelemba ♀

abesa ♀ U

abesa ♀

f



tentyris ♂ U

tentyris ♂

carshena

absolon ♀

absolon ♀







a



perseis



eusemoides



hybridus



hybridus U

b



coprates



ruspina



eleus

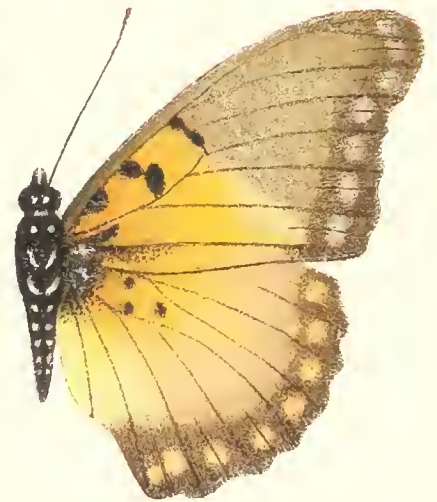
c



zampa



edwardsi ♂ U



edwardsi ♀

d



francina



preussi



inanum c



inanum f











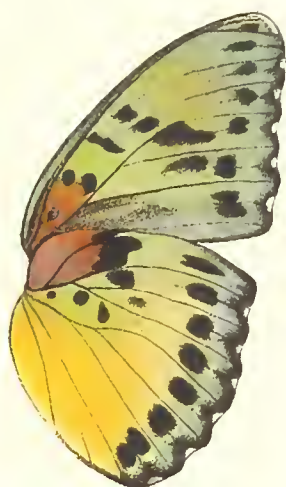
a



nigrocilia U



gausape U



vetusta U



cyparissa U



aurata U

b



adonina



xypete



xypete U



herberti U



niveovittata U

c



zaddachi



inanum U



sarita



sarita U



rana U

d



eberti U



barombina



chriemhilda



wardi U





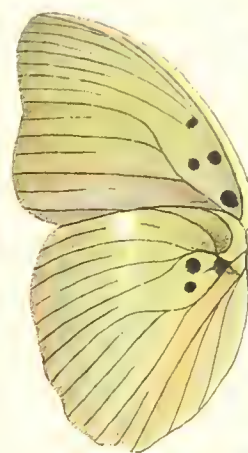
a



luperca



medon ♂



medon U



agnes

b



harpalyce



eupalus



losinga ♀

c



losinga ♂



spatiosa ♂



spatiosa U



neophron ♀

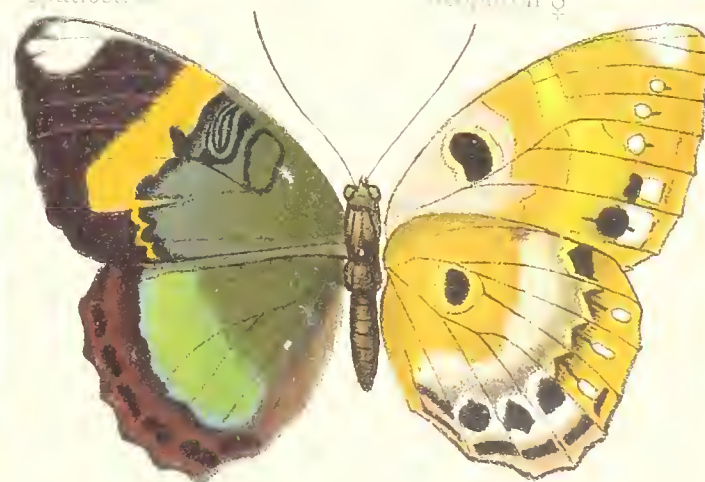
d



neophron ♂



neophron U



elegans

























































